DOCUMENT RESUME

ED 268 231 CE 043 867

TITLE	Development and Field-Test of an Instrument to Assess the Extent to Which a Vocational Educational Program Is Either Competency-Based or Conventional. Final Report from September 1, 1984 to August 31, 1985.
INSTITUTION	University of Central Florida, Orlando. Coll. of Education.
SPONS AGENCY	Florida State Dept. of Education, Tallahassee. Div. of Vocational Education.
PUB DATE	Oct 85
NOTE	152p.
PUB TYPE	Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	*Competency Based Education; Field Tests; *Measurement Techniques; Pilot Projects; *Rating Scales; *Test Construction; Trade and Industrial Education; *Vocational Education; Welding

ABSTRACT

This report describes the production and pilot test of an assessment instrument for vocational education programs. The instrument was designed to be used following a site visit that includes a 30- to 45-minute interview with the program instructor and a 30-minute interview with one small group of students. Reliability and validity information was collected but was weaker than considered desirable; an adequate study was recommended. Following the 10-page narrative are extensive appendixes, including the program description instrument. The instrument provides for rating each of the items that are divided into eight areas: knowledge instruction, performance instruction, individualization, program content specification, knowledge assessment, performance assessment, grading, and related factors. A site visitor's interview outline concludes the instrument. Other appendixes include scoring instructions, frequency distributions for experts' judgment of items, program profiles for 16 welding and 14 other programs, frequency distributions of item ratings for 30 programs, and tables of scale scores for the 16 welding and 14 other programs. (YLB)

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ED268231

FINAL REPORT
Project No. DOE 5-2C21
From September 1, 1984 to August 31, 1985

DEVELOPMENT
AND
FIELD-TEST
OF AN INSTRUMENT TO
ASSESS THE EXTENT TO WHICH
A VOCATIONAL EDUCATIONAL PROGRAM
IS EITHER
COMPETENCY-BASED OR CONVENTIONAL

College of Education
UNIVERSITY OF CENTRAL FLORIDA
Orlando, Florida

October, 1985

Robert R. Lange
Project Director and Professor

CE043867

The project reported herein was conducted pursuant to a grant from the Division of Vocational Education, Florida Department of Education. Contractors undertaking such projects are encouraged to express freely their professional judgments in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent the official position or policy of the Florida Department of Education.

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ABSTRACT OF FINAL REPORT

Title of Project: Development And Field Test Of An Instrument To Assess The Extent To Which A Vocational Educational Program Is Either Competency-Based Or Conventional

Organization: University of Central Florida

Project Director: Robert R. Lange

Expenditures: $21,690

Duration of Project: February, 1985 - August, 1985

Project Number: DOE 5-2C21

The intent of this project was to produce and field-test an instrument that could be used to identify the extent to which Vocational Education programs are either Competency-Based or Conventional. An initial version of the instrument was produced and pilot tested. Based on the results of the pilot test, the instrument was revised and field-tested with thirty programs. The instrument is designed to be used following a site visit that includes a 30 to 45 minute interview of the program instructor and a 30 minute interview of one small group of 20 to 4 students.

The site visitor provides a rating for each of the items that are grouped into eight areas. The site visitor can then use the scoring instructions to produce a score for each of the eight scales. The scores for each of the eight scales are plotted to produce a program profile.

The report includes a description of the project methodology, a discussion of the instrument reliability and validity, project results include the impressions of common problems experienced by many vocational education programs.

The Appendix of the report contains copies of the instrument, scoring instructions, frequency distributions of experts' judgments of the items, profiles of sixteen welding programs and fourteen other programs, and tables of item ratings obtained from the thirty programs.

METHODOLOGY

The methodology section of this report describes the project activities in chronological order. Each of the project activities required a considerably different amount of time to complete.

PROJECT PLANNING

The major activities listed in the project proposal were reviewed for completeness and appropriateness. After consideration of the details of the proposal, it was decided to continue the project as proposed. No major modifications were made to the planned schedule of activities. However, the project funds were not available until the last week in February, rather than early September as had been originally planned. At that time there was some question as to whether the field test of the proposed instrument could be completed by August, 1985, the end of the project year.

After initiating the project, the State Division of Vocational Adult, and Community Education requested the project Director to visit Tallahassee to coordinate this project with a sister project being conducted by staff at Florida State University. The sister project intended to field-test a strategy for assessing the knowledge and performance of completers of Welding Programs. The intent of the coordination between the projects was to permit the State to pilot-test its ability to assess the impact of competency-based vocational education on student learning.

Upon completion of that conference, and under the urging of the contact personnel from the State Division, a major modification in the project plan was executed. Initially the project had planned to visit three or four vocational programs within ten different institutions. At the request of the Division, that plan was modified. It was agreed that an effort would to be made to visit the welding program and one other program in a larger number of institutions. It was subsequently agreed that the project would attempt to visit a total of 25 to 28 different institutions throughout the State of Florida. This plan would permit the State to compare the knowledge and performance of completers of CBVE programs with that of conventional programs.

The modification in the project was to be accompanied with additional funding. However, because of circumstances within the DVACE, the additional funding was not obtained. Consequently, twelve of the institutions that were to be visited had to be deleted from the list.

DEFINING THE COMPONENTS OF COMPETENCY-BASED VOCATIONAL EDUCATION

After consideration of alternative definitions of competency-based vocational education CBVE, the decision was made to incorporate the definition included in the final report, "Identification and Description of Barriers to The Implementation of Competency-Based Vocational Education" prepared by Steven Sorg, Glen Fardig, Robert Lange, and Richard Koch of the University of Central Florida. (1984) During the initial meeting with the State Department and the sister project from Florida State University, there was verbal agreement and approval to use the specified definitions of competency-based vocational education.

PROJECT ADVISORY COMMITTEE

A four-member project advisory committee was appointed. A list of the advisory committee members is included in the Appendix. On February 28, 1984, the project advisory committee met to review the definition of vocational education and the project proposal. During the half-day project advisory committee meeting, the proposed steps and activities for the project were outlined. The project advisory committee provided suggestions about the major components to be included within each of 5 major sections of the proposed instrument. These advisory comments were used to the fullest extent possible.

DEVELOPMENT OF THE INITIAL SET OF INSTRUMENT ITEMS

The literature obtained during the search conducted for the 1984 study by Sorg, Fardig, Lange, and Koch was utilized for obtaining initial input for indicators that differentiate competency-based vocational education from conventional vocational education. A compendium of approximately 250 program descriptors or indicator statements were identified. Each statement was intended to be an indicator of either competency-based vocational education or conventional vocational education. An additional effort was made to identify statements that applied equally well to both CBVE and conventional vocational education. The total set of items was reviewed, edited, and organized into five major sections. The sections included; Instructional Strategies, Assessment Strategies, Individualization, Program Content or Competency specification, and Supporting or Related Program Characteristics. The items were arranged in instrument format and were prepared for initial pilot testing.

PILOT TEST OF THE INITIAL INSTRUMENT

The strategy for utilizing the initial instrument consisted of a three-hour site visit to each of two programs within an institution. Five institutions were contacted and asked to participate in the initial pilot testing of the instrument. The welding program and one other program in each institution were scheduled to be visited. Time arrangements were made so that the site visitor could use a maximum of three hours visiting each program. The site visit consisted of a 30 to 45 minute interview with the instructor, a 30 minute interview with a group of three students, and a review of tests and other program materials made available by the instructor. Immediately following the visit to each program, the items on the instrument were completed by the visitor.

RESULTS OF THE PILOT TEST

The three persons who participated in the trial of the pilot instrument and a fourth CBVE expert participated in a one-day conference to critique the pilot instrument. The wording of the items on the instrument and the procedures for conducting the interviews and completing the instruments were discussed.

Based on the experience of the pilot test of the instrument, recommendations were generated for revision. The recommendations made by the group included the following:

1) The interview questions should be removed from the instrument. Because of the diverse nature of each program, and because of the preferred interviewing style with a variety of site visitors, a set of prescribed questions tended to interfere with the smooth flow of the interview. The key task of the interviews is to obtain a description of how the program operates. Instructors frequently describe multiple aspects of their program in response to one question. Students respond in a similar way. Consequently, a series of structured questions tends to require unnecessary repetition of questions, and tends to disrupt the flow of the interview.

2) In place of structured questions, it was recommended that an interview outline be constructed. The outline would merely list the topics or aspects of the program about which the interviewer needed to obtain information. It was suggested that it would be easier for the interviewer to scan a one page topic outline rather than to read a specific set of questions.

3) It was also suggested that the instrument be separated into a larger number of components. Specifically, it was observed that the instructional strategies used for the knowledge or theory part of the program was frequently significantly different from the instructional strategy used for the performance aspect of the program. The knowledge or theory part of the program was often presented in a conventional manner, while the performance aspect of the program was conducted in an essentially CBVE format. It was also reported that the assessment strategies for the knowledge or theory part of the program and the performance part of the program were often different. It was suggested that separate sections be developed to assess the instruction and assessment in the two major parts of occupational programs.

4) The group of pilot visitors suggested that the questions on grading procedures be grouped into a separate section. Portions of the grading strategy are often dictated by the institution.

DEVELOPMENT OF FIELD TEST VERSION OF THE INSTRUMENT

The results of the pilot test of the initial instrument and the review conference on the pilot test indicated a need for a substantial revision of the initial instrument. In response to the information from the pilot test in the conference, a revised instrument was prepared. The revised instrument did not include specific interview questions. An interview outline was prepared to use as a guide for the site visitors. The guide was intended for use in both the interview of the instructor and the group interview of students.

The instrument was separated into eight sections. The eight sections were labeled: (1) Knowledge Instruction, (2) Performance Instruction, (3) Individualization, (4) Program Content Specification, (5) Knowledge Assessment, (6) Performance Assessment, (7) Grading, and (8) Related Detail.

The items within the pilot version were substantially modified in wording and sequence for inclusion in the field test version of the instrument. A copy of the field test version of the instrument and interview outline are include as Appendix A of this report.

IDENTIFICATION OF ITEM WEIGHTING

The review of the literature and conversations with experts on CBVE, quickly revealed that there is a great deal of difference of opinion about what constitutes evidence of a strong competency-based program. It also became obvious that within the wide diversity of programs, a substantial variation in indicators are used as evidence of competency-based or conventional programming strategies.

It was realized that it would be nearly impossible to get 100 percent agreement about the value of any particular indicator for differentiating between competency-based and traditional vocational programs. It was noted that a specific highly competency-based program could fail to satisfy several indicators. At the same time, it was recognized that most programs will have some elements of competency-based strategies and some elements of conventional strategies incorporated within their procedures. It became obvious that it was necessary to develop a fairly comprehensive list of indicators. No single indicator or small group of indicators would be sufficient for discriminating the degree to which vocational programs are competency-based, and a positive response to a specific indicator would not be necessary for a program to be either highly competency-based or highly conventional.

It was also realized that some indicators are stronger indicators of the two types of programs, while other indicators are relatively weak. That is, some items are more important than others for differentiating between competency-based and conventional programs. For this reason it was judged necessary to obtain item weightings.

A group of eighteen vocational educators throughout the United States and Canada were identified as having expertise about competency-based vocational education programs. A special form of the instrument was developed which asked the experts to rate the extent to which each item was more typical of competency-based programs or more typical of conventional programs. The response was made on a 6-point scale of degree of representation of competency-based and a 6-point scale and degree of representation of conventional programs. A response of zero indicated the item represented a characteristic equally expected of both competency-based and conventional programs.

A set of frequency distributions of responses from the fourteen CBVE experts who responded is included as Appendix C in this report. Based on the frequency distribution, means, and medians of the responses, weightings were assigned for each item. A weighting of zero indicated the item was equally appropriate for both CBVE and conventional programs and does not differentiate between the two. An item weighting of one (1) was assigned to weaker indicators of either competency-based or conventional programs, a weighting of two (2) was assigned to moderately strong indicators of either competency-based or conventional vocational programs, and a weighting of three (3) was assigned to stronger indicators. The assigned weighting of each item is also presented in a set of frequency tables included in Appendix C.

DATA COLLECTION

Twenty-eight institutions were selected by the division for site visits. Of these, twelve indicated they would not operate a welding program during the summer. The remaining sixteen institutions agreed to participate in this instrument development project.

Telephone conversations and follow-up letters were used as a means for scheduling site visits to two programs at each of 16 institutions. In one institution only one program was visited because of a last minute unforeseen change in instructor schedule. From the 31 program site visits, 16 welding programs and 15 programs in some other areas were rated. The site visits were conducted during the summer of 1985. Each item of the instrument was rated on a 4 point scale. A rating of zero indicated that the item did not apply to the program. A rating of one indicated that the item applied to a low extent, a rating of two indicated that the item applied to a moderate extent, a rating of three indicated the item applied to a large extent.

The responses to all of the items for each of the 31 programs were coded on a computer. The computer program was written to calculate a score each for each of the eight scales.

SCORING PROCEDURE

Eight separate scores were calculated for each program. A separate score was used to represent each of the eight major sections. A set of scoring instructions was produced and is included as Appendix B. A brief summary of the instructions is presented below.

The field-test version of the instrument was designed so that the sum of the weightings for the items that indicated competency-based strategies equaled the sum of the weightings for those items that indicated conventional strategies for each of the eight scales. Two sub-scores were calculated for each of the eight scales. A CBVE sub-scale was formulated by first multiplying the rating by the item weight. Thus, for any item, the range of the product was from zero through nine. The sub-scale score was then obtained by adding each of the relevant products. In a similar manner, a sub-scale score was obtained for the extent to which the program utilized conventional strategies on each scale. The total of the products for the conventional sub-scale was subtracted from the total of the product for the CBVE sub-scale. In order to remove negative scores, a constant was added to the difference. The value of the constant for each sub-scale was the maximum value that would be obtained if all of the items on the conventional strategy were rated as applying to a large extent. Thus, a score of zero became the lowest possible score for each scale. The eight scores for each program were calculated in a similar manner.

DEVELOPMENT OF THE PROFILE

The eight sub-scales were associated with a variety of maximum values. Consequently it was necessary to develop a strategy for comparing the comparability of the programs across scales. The technique used for this purpose was to divide the scales into five regions. Region One represented a program that was mostly conventional, Region Two represented a program moderately conventional, Region Three, a program that had a mixture of conventional and competency-based strategies, Region Four, a program that was moderately CBVE, and Region Five, a program that was strongly CBVE. These five regions were nearly equally spread throughout the range of potential total score on each scale. The range of scores were superimposed on a sheet of paper having equal distance for each scale from the score of zero to the highest possible score. The eight scales were then arranged vertically on a page. The eight scores for each program were identified on a profile sheet. The profile sheet permits a quick viewing of the extent to which a program uses competency-based or conventional strategies in each of the eight areas assessed by the instrument. A copy of a profile sheet for each of the thirty-one programs is included as Appendix D & E in this report.

Status And Use of The Current Instrument

This project was viewed as an attempt to produce and field-test an instrument that can be used to describe the instructional strategies used by a single vocational education program within a specific institution. The field-tested instrument can be viewed as a usable instrument in its present form. Although the instrument could benefit from additional development, it is currently functional.

Perhaps one of the potential uses of the instrument is to explore the extent to which a program is internally consistent. The profile of eight scores could provide an initial focus of an internal review. The profile helps to identify parts of the program that are not consistent with other parts of the program. The individual items can serve as a discussion starter when considering needs for program modification.

RESULTS

The results of this research project are represented by the development of an instrument that has received a limited amount of initial field testing. In addition, results are represented by the profiles of the 31 programs contained in the Appendix. A number of observations based on the initial development, pilot test, and field trial of the instrument are also worthy of note.

INSTRUCTOR'S CONCEPT OF CBVE

During the site visits it became quite apparent that throughout the state various instructors had substantially different opinions about what constitutes a CBVE program. In some locations instructors seem to equate competency-based programs with open-entry/open-exit enrollment procedures. It is often believed that merely having an open-entry/open-exit program and a concentration on the exit performance ability of students is sufficient to indicate a strong competency-based program. Overall there was little concern about the methodology used to generate the content of the program. Little emphasis seemed to have been placed on the use of specialized strategies, such as the DACUM analysis or similar procedures, for defining the appropriate content for a program. There seemed to be little concern about the need for validating the appropriateness of the content of a vocational program in a particular area. In the majority of cases most instructors seem to believe it is sufficient for them to rely on their own occupational experience.

Another very common practice in vocational programs throughout the state is associated with operating the knowledge or theory component of instruction in a substantially different manner than performance or skills instruction. Although a very large number of programs tend use an open-entry/open-exit strategy, only a few programs make use of student learning guides or other strategies that permit students to study the knowledge or theory part at their own rate, or at different times. It is very common for instructors to convene all students together for an hour to an hour and one half every day to participate in a common lecture/demonstration discussion session. The same class is attended by all students regardless of their point of progress in the program. Students who are in their first week may attend the same class of related instruction as students who have been in the program eight or nine months. Thus the knowledge and theory part of the course is offered in a very conventional manner and is totally unassociated with the work the student is doing in the lab or performance part of the course. While the knowledge or theory phase of instruction may be highly conventional, the performance aspect of the instruction can be substantially competency-based. Students can progress at different rates and can be working on different components of the program at the same time. It is very common for students to be required to progress through a specific sequence or order of skills. The result of using two such strategies together in one program is a less desirable instructional program than most instructors and students would like to see in operation.

It would seem that the open-entry/open-exit strategy is inappropriate for programs not equipped to permit students to work individually in a self-paced and guided strategy for both major portions of the program. Programs that do not use individual learning guides or similar strategies that permit students to progress through the knowledge and theory part of the program at different times and at different rates appear to be substantially less effective when they are required to use an open-entry/open-exit strategy. Although many instructors and students attest to the positive benefits of the open-entry/open-exit strategy for maintaining enrollment in the program and for spreading program completion time throughout the year, both instructors and students express a great deal of frustration with the inappropriateness and undesirability of requiring students to attend the same knowledge and theory instruction sessions regardless of where they are in the program.

The frequency distribution of the item ratings assigned to the 31 programs also demonstrates a wide range of the extent to which specific strategies are utilized in vocational programs across the State of Florida. The distributions cannot be seen as being totally representative of programs throughout the state. No attempt was made to select a program or institutions on the basis of random assignment and the institutions visited represent a convenient sample. The primary intent of this project was to produce and field test an instrument rather than to gather data for the representative assessment of the extent to which programs in Florida are competency-based.

INSTRUMENT RELIABILITY AND VALIDITY

There are a number of factors that affect the reliability and validity of information collected on a observational rating form. First, the responses provided by the instructor and students to the site visitor on any particular day may be substantially different than those provided on a different day. Consequently the day-to-day variation in the information obtained by a site visitor can affect the reliability and the validity of the data. There are also variations in the backgrounds and orientations of different site visitors. Thus, two site visitors receiving the same information from instructors and students may assign somewhat different ratings to each of the items on the scale. A rating tendency of different site visitors and different orientations to meanings assigned to items can also affect the scores. Thus, two different site visitors visiting the same program could possibly generate substantially different scores even if they received exactly the same information. There is some evidence that such an influence may have impacted part of the data gathered during the field test of this project.

The site visitor training available for use in this project was relatively short. Each site visitor received only three hours of training. The training consisted primarily of reviewing the items and discussion of the interpretation of the items. The amount of training normally devoted to the training of site visitors for use of similar instruments and the training of raters to use instruments of similar complexity is normally substantially greater than that which was available for this project. The small amount of training utilized for this project was associated with the lack of availability of training material. The training probably would have required the use of several video recordings or audio recordings of model interviews. Simultaneous viewing and comparison of instrument ratings and typical expert ratings would probably be necessary. Development of such a training session would require a substantial investment of time and energy and was beyond the scope of resources available to the project.

The validity of the instrument is associated with an instrument factor and a data factor. The instrument factor concerns the extent to which the instrument itself consists of items that are appropriate and represent the proper content for differentiating competency-based and conventional programs. The assessment of this aspect of validity (content validity) requires professional judgement. In this project the rating of the items obtained from the 14 experts constitutes judgment of the extent to which the instrument has content validity. As can be seen in the frequency distributions of the experts' judgment of each item, there is not universal agreement about each item. The disagreement is associated with two potential factors. First, there could have been an error in the recording process. The experts could have been confused in their recording. That is, they could have recorded a response in the CBVE column when they intended to record it in the conventional column and visa versa. Second, there could be a substantial disagreement in professional opinion about what constitutes a competency-based or conventional program. The relatively wide range of ratings of the appropriateness of each item produced by the experts indicates that vocational educators have not reached broad agreement about competency-based vocational education.

The second component of validity is concerned with the extent to which the score adequately represents or depicts the status of the construct being assessed. Because of the request by the State Department of Vocational Education to extend the number of institutions visited, it was not possible to obtain independent expert judgment about the extent to which each of the 31 programs represented competency-based or conventional strategies. Thus, there is no evidence available for this report about the extent to which the scores generated in the field test methodology appropriately classified each of the programs.

In order to partially assess the reliability of the instrument a total of ten programs (two programs in each of five institutions) were visited a second time by a different site visitor. The eight scores were generated for each of the ten programs based on each site visit. A product moment correlation coefficient for each of the eight scales was calculated based on the two scores generated for each program. The reliability (test-retest reliability) coefficients are reported in Appendix I.

Compared to what might be expected from a sight visit instrument with little observer training, the reliabilities for five of the eight scales were relatively high, .71 to .91. The other scales Performance Instruction, Performance Assessment, and Content Specification had lower reliabilities, .62, .43, and .53. The lower reliabilities resulted because there was little variability in the scale scores. Most all of the programs visited for reliability checks were judged to use Performance Instruction, Performance Assessment, and Content Specification strategies that were moderately CBVE or mostly CBVE. The skewness in the distributions and restricted ranges resulted in lower correlations or reliabilities.

The reliability and validity information available at this time is weaker than is considered desirable for the instrument. Two major efforts would have to be mounted in order to conduct an adequate study of instrument reliability and validity. The first consists of the development of adequate training materials to provide an appropriate amount of training for site visitors. It is anticipated that the amount of training necessary would include two to three six-hour days, or a total of approximately six to twelve hours of training. Second, a reasonably large number of programs, 50 to 100, would need to be visited and revisited by a set of trained site visitors. Because of the nature of the instrument, the development of an internal consistency reliability coefficient obtained from one visit of each institution is not feasible. In addition, each of the programs should be visited by a panel of experts so that it could be classified in terms of the degree to which it represents a competency-based program. The results from the larger number of site visits could be compared with the judgment of the team of experts in order to determine whether the instrument appropriately differentiates between competency-based and conventional programs. It would be necessary for the team of experts to reach agreement about what constitutes conventional and competency-based programs.

The effort to develop appropriate reliability and validity information for an instrument such as the one developed in this study would be a relatively large undertaking. Such a project would require substantial support from an interested agency.

APPENDIX A

Program Description Instrument for Occupational Vocational Education Programs

PROGRAM DESCRIPTION

INSTRUMENT
For

OCCUPATIONAL VOCATIONAL EDUCATION PROGRAMS

Revised Field Test Version

September, 1985

Robert R. Lange
University of Central Florida

A KNOWLEDGE INSTRUCTION

DESCRIPTORS	0=not at all 1=low extent 2=moderate ext 3=high extent
A1 Instructor/student interaction takes place during one-on-one or small group sessions.	☐ A1
A2 Instructor/student interaction takes place during large group classroom sessions.	☐ A2
A3 Students use instructional materials on their own whenever the student is ready for specific content.	☐ A3
A4 Students rely on the instructor for directions when working with instructional materials.	☐ A4
A5 Students study a topic:	
A5.a until they achieve the required level.	☐ A5.a
A5.b as determined by an instructor's schedule.	☐ A5.b

0=not at all
1=low extent
2=moderate ext
3=high extent

DESCRIPTORS

A6 Students study knowledge, theory, or special background material:

A6.a at varying times, when they are learning the related performance task/skill. ☐ A6.a

A6.b at varying times, but independent of task/skill performance sequence. ☐ A6.b

A6.c at the same time as other students, i.e., according to an instructor's schedule or text sequence. ☐ A6.c

A7 Faster learning students:

A7.a go on to new topics when they are ready. ☐ A7.a

A7.b do other things and wait for the class to catch up. ☐ A7.b

A8 Slower learning students:

A8.a stay on a topic until they have achieved the level required. ☐ A8.a

A8.b achieve as much as they can, then go onto a new topic when the scheduled time limit is reached. ☐ A8.b

0=not at all
1=low extent
2=moderate ext.
3=high extent

DESCRIPTORS

A9 Instructors revise or replace the instructional materials:

A9.a when there are modifications in entry level job tasks.

☐ A9.a

A9.b for reasons unrelated to task/skill statements, such as appearance or new editions.

☐ A9.b

B PERFORMANCE INSTRUCTION

0=not at all
1=low extent
2=moderate ext.
3=high extent

DESCRIPTORS		
B1	Instructor/student interaction takes place during one-on-one and small group sessions.	☐ B1
B2	Instructor/student interaction takes place during whole-class lab/shop sessions.	☐ B2
B3	Students use instructional materials that enable them to begin task/skill development when they are ready.	☐ B3
B4	Students wait for instructor assignments before working on task/skill development.	☐ B4
B5	The instruction is group-paced, i.e., most students work on the same task/skill during a lab/shop session.	☐ B5
B6	The instruction is self-paced, i.e., students work on task/skill development on their own, independent of the tasks/skills other students are working on.	☐ B6

DESCRIPTORS	0=not at all 1=low extent 2=moderate ext. 3=high extent
B7 Students:	
B7.a use learning guides or instructional materials keyed to program tasks/skills.	☐ B7.a
B7.b rely on instructor demonstrations and instructions.	☐ B7.b
B7.c use lab manuals, workbooks, and other materials related to topics.	☐ B7.c
B8 Students practice a task/skill:	
B8.a as long as they need to achieve the skill.	☐ B8.a
B8.b as determined by instructor schedule.	☐ B8.b
B9 When the faster learning students complete the task, they:	
B9.a go on to the next task.	☐ B9.a
B9.b help other students or assist the instructor with shop/lab duties, paperwork.	☐ B9.b
B9.c continue practicing the same task/skill.	☐ B9.c

0=not at all
1=low extent
2=moderate ext.
3=high extent

DESCRIPTORS

B10 Slower learning students:

B10.a stay on a task/skill until they have achieved the required level of proficiency. ☐ B10.a

B10.b are exposed to the same number of skills, but achieve less proficiency within the scheduled time limits. ☐ B10.b

B10.c drop the program and/or transfer to another program. ☐ B10.c

B11 Instructors revise or replace the instructional materials:

B11.a when there are modifications in entry level job tasks ☐ B11.a

B11.b when new or updated materials better match the program tasks/skills. ☐ B11.b

B11.c for reasons unrelated to task/skill statements, such as appearance or new editions. ☐ B11.c

DESCRIPTORS	0=not at all 1=low extent 2=moderate ext. 3=high extent
B12 Students are assigned to live work (customer work) based on:	
B12.a customer demands and student availability irrespective of student learning sequence.	☐ B12.a
B12.b student need for task practice and appropriateness to student learning sequence.	☐ B12.b
B13 Student task/skill practice activities:	
B13.a are based on generalized practice activities that do not duplicate or simulate actual work conditions.	☐ B13.a
B13.b are based on live work (customers, etc.) or simulation of live work.	☐ B13.b

C INDIVIDUALIZATION

DESCRIPTORS		0=not at all 1=low extent 2=moderate ext. 3=high extent
C1	Students with previous training or experience who demonstrate the ability to perform a task/skill skip instruction on that task/skill.	☐ C1
C2	Regardless of previous training or experience, students are required to receive instruction and progress through the program in the same way as all other students.	☐ C2
C3	Students receive knowledge/theory instruction through:	
C3.a	large group lecture/demonstration	☐ C3.a
C3.b	modules or learning guides rather than a single textbook	☐ C3.b
C3.c	audio visual materials	☐ C3.c
C3.d	one-on-one and/or small group instructor/student interaction	☐ C3.d
C3.e	one-on-one and/or small group student/student interaction	☐ C3.e
C3.f	simulation activities, e.g., role play models, manikins.	☐ C3.f

Item C3 continued on next page

DESCRIPTORS		0=not at all 1=low extent 2=moderate ext. 3=high extent
C3 (cont'd)		
C3.g	general field experience (e.g., observation, field trips, unspecified work assignments, coop).	☐ C3.g
C3.h	live work, field experience (e.g., clinic, school shop, coop, job site); includes contracts for specific knowledge/theory learning.	☐ C3.h
C4	Students receive task/skill instruction through:	
C4.a	large group lecture/demonstration	☐ C4.a
C4.b	modules or learning guides rather than a single textbook	☐ C4.b
C4.c	audio visual materials	☐ C4.c
C4.d	one-on-one and/or small group instructor/student interaction	☐ C4.d
C4.e	one-on-one and/or small group student/student interaction	☐ C4.e
C4.f	simulation activities, e.g., role play, model office, model job, manikins.	☐ C4.f
C4.g	general field experience (observation, field trips, unspecified work assignments, coop).	☐ C4.g

DESCRIPTORS	0=not at all 1=low extent 2=moderate ext. 3=high extent
C4 (cont'd)	
C4.h live work, field experience (e.g., clinic, school shop, job site); contracted for specific task/skill learning.	☐ C4.h
C5 When learning a task/skill, students:	
C5.a use the same learning activities and materials as other students	☐ C5.a
C5.b select learning activities that best match their learning styles (modalities).	☐ C5.b
C6 Students are considered to be program completers when they:	
C6.a achieve their required tasks/skills	☐ C6.a
C6.b have the required clock hours and a passing grade.	☐ C6.b

D PROGRAM CONTENT SPECIFICATION

DESCRIPTORS	0=not at all 1=low extent 2=moderate ext. 3=high extent
D1 The program content describes:	
D1.a tasks/skills to be learned.	☐ D1.a
D1.b topics, units, subject matter to be covered.	☐ D1.b
D2 The knowledge content statements:	
D2.a describe observable and/or measurable behaviors (e.g., calculate, solve, select)	☐ D2.a
D2.b describe specific knowledge outcomes (e.g., list basic food groups).	☐ D2.b
D2.c describe general topics (e.g., circulatory system, metals)	☐ D2.c
D2.d describe understandings and/or appreciations (e.g., know, appreciate)	☐ D2.d
D3 The performance content statements:	
D3.a describe observable and/or measurable behaviors (e.g., align, type).	☐ D3.a
D3.b describe specific products or outcomes (e.g., manicure nails, install door frames).	☐ D3.b

Item D3 continued on next page

DESCRIPTORS	0=not at all 1=low extent 2=moderate ext 3=high extent
D3.c describe general topics (e.g., brakes, telephone techniques).	☐ D3.c
D3.d describe understandings or appreciations (e.g., know, appreciate).	☐ D3.d
D4 The program content statements were:	
D4.a derived from published task/skill lists such as V-TECS or other sources.	☐ D4.a
D4.b derived from current texts and/or instructional materials.	☐ D4.b
D4.c based on the instructor's work experience	☐ D4.c
D4.d derived from a specific study or local occupational analysis.	☐ D4.d
D4.e arrived at by consensus of committee of instructors.	☐ D4.e
D5 After the program content statements are selected or created, they are reviewed/verified by:	
D5.a the program advisory committee.	☐ D5.a

Item D5 continued on next page

0=not at all
1=low extent
2=moderate ext
3=high extent

DESCRIPTORS

D5 (cont'd)

D5.b a group of workers from local job sites.

☐ D5.b

D5.c the instructor through personal field contacts.

☐ D5.c

D5.d committee of instructors.

☐ D5.d

D6.e the instructor.

☐ D5.e

D6 The program content statements are regularly updated to reflect changes in the occupation by:

D6.a a program advisory committee.

☐ D6.a

D6.b group of workers from local job sites.

☐ D6.b

D6.c instructor through personal field contacts.

☐ D6.c

D6.d committee of instructors.

☐ D6.d

D6.e the instructor.

☐ D6.e

DESCRIPTORS	0=not at all 1=low extent 2=moderate ext 3=high extent
D7 Students have a copy of:	
D7.a the list of program tasks/skills.	☐ D7.a
D7.b the course outline or syllabus.	☐ D7.b
D8 Students find out what to learn by relying on the content of the books, materials, presentations, and assignments.	☐ D8
D9 Students rely on the instructor to tell them what they will learn in the program.	☐ D9
D10 Students regularly note their progress by referring to a list of program tasks/skills.	☐ D10

E KNOWLEDGE ASSESSMENT

	DESCRIPTORS	0=not at all 1=low extent 2=moderate ext 3=high extent
E1	Students have access to a written description of what they will be expected to know before they take a test.	☐ E1
E2	Students are unsure of what they will be expected to know during a test.	☐ E2
E3	Students can describe what they will be expected to know during a test.	☐ E3
E4	Tests are constructed to show a range of student achievement.	☐ E4
E5	The passing level on a test is based on a percentage or some fixed score.	☐ E5
E6	The passing level on a test is based on the level of knowledge expected of entry level employees.	☐ E6
E7	Tests are taken from texts or other sources or constructed without a planned effort to match program tasks and skills.	☐ E7
E8	Tests are constructed to match the list of program tasks and skills.	☐ E8
E9	Students take different tests at different times. (when they are ready)	☐ E9

DESCRIPTORS	0=not at all 1=low extent 2=moderate ext 3=high extent
E10 Students take the same test at the same time.	☐ E10
E11 Instructors review test results individually with students.	☐ E11
E12 Instructors review test results with the whole class.	☐ E12
E13 A student is retested on knowledge not initially achieved.	☐ E13
E14 A student can take a test only once.	☐ E14

F PERFORMANCE ASSESSMENT

	DESCRIPTORS	0=not at all 1=low extent 2=moderate ext. 3=high extent
F1	There is a written description of the criteria for successful performance of each task/skill.	☐ F1
F2	There is no written description of the criteria for successful performance.	☐ F2
F3	Students are unsure of the criteria for successful performance.	☐ F3
F4	Program task/skill assessment criteria:	
F4.a	use general terms to describe skill performance such as: "effectively", "carefully", "as judged by the instructor".	☐ F4.a
F4.b	use specific terms which describe quality distinctions in process or product, such as: "within five minutes", "within a tolerance of .2 mm", "with no welding splatter".	☐ F4.b
F4.c	fail to make quality distinctions, e.g., may only list or relist task procedures or steps.	☐ F4.c
F5	Most students demonstrate skill performance at different times, i.e., when they have acquired the necessary skill.	☐ F5
F6	Students demonstrate skill performance at times selected by the instructor, irrespective of their readiness.	☐ F6

	DESCRIPTORS	0=not at all 1=low extent 2=moderate ext 3=high extent
F7	Although student skill performance may be individually evaluated, the instructor provides a critique to the group on task/skill performance.	☐ F7
F8	Each student individually demonstrates every agreed-upon task/skill to the acceptable level.	☐ F8
F9	Students can achieve a satisfactory rating on a task performance without correctly demonstrating all critical aspects of the task, e.g., "averaging."	☐ F9
F10	Students demonstrate skill performance in groups.	☐ F10
F11	Performance test criteria are based on the skills performed by new employees in the occupation.	☐ F11
F12	Performance tests are constructed without a planned effort to match the program tasks/skills.	☐ F12
F13	Performance test requirements match the program tasks/skills.	☐ F13
F14	Performance tests change when the description of program tasks/skills changes.	☐ F14
F15	A student may demonstrate skill performance only once.	☐ F15

DESCRIPTORS	0=not at all 1=low extent 2=moderate ext 3=high extent
F16 A student has more than one opportunity to demonstrate skill performance.	☐ F16
F17 Written test items are used only to check the ability to perform written job tasks.	☐ F17
F18 Written tests are used as substitutes for performing "hands-on" skills.	☐ F18
F19 Students demonstrate skill performance in situations that match actual job conditions.	☐ F19

G GRADING

DESCRIPTORS	0=not at all 1=low extent 2=moderate ext. 3=high extent
G1 Student employability skills are:	
G1.a evaluated and reported separately from skill performance.	☐ G1.a
G1.b not considered in grading.	☐ G1.b
G2 Student grades are based on the level of student achievement relative to other students in the program.	☐ G2
G3 Student grades are based on achievement of pre-established performance criteria.	☐ G3
G4 A high score on some tests can help make up for a low score on other tests.	☐ G4
G5 Student grades are based on the number of tasks/skills achieved within a grading period.	☐ G5
G6 A student's grade in a grading period is based on an average of individual knowledge and skill performance.	☐ G6
G7 Performance on each test must meet pre-established standards.	☐ G7

H RELATED FACTORS

DESCRIPTORS	0=not at all 1=low extent 2=moderate ext 3=high extent
H1 Students have ready access to records of their tasks/skills achieved and those yet to be achieved for program completion.	☐ H1
H2 Students rely on the instructor to inform them of the tasks/skills they've achieved and those remaining to be completed.	☐ H2
H3 There are individual student record sheets that are kept current and represent the tasks completed by students.	☐ H3
H4 When students exit a program, they are provided with records that:	
H4.a contain primarily time of enrollment and grade for the enrollment period.	☐ H4.a
H4.b indicate the specific tasks/skills achieved by the student.	☐ H4.b
H5 Students may exit from the program:	
H5.a during any week of the year.	☐ H5.a
H5.b only at the end of a term or semester.	☐ H5.b

0=not at all
1=low extent
2=moderate ext.
3=high extent

DESCRIPTORS

H6 New students start the program:

H6.a during any week of the school year.

☐ H6.a

H6.b at the beginning of a term or semester.

☐ H6.b

H7 The new student orientation is structured, i.e. students are individually oriented to the program-specific procedures and learning system.

☐ H7

H8 The new student orientation is unstructured, i.e., students learn about the program procedures and learning system gradually, e.g., on their own, from other students.

☐ H8

H9 Program completion is based on satisfactory grades during a fixed number of terms or semesters.

☐ H9

H10 Students complete the program when they have achieved the task/skill requirements contained in a specified list, regardless of time of year.

☐ H10

H11 The physical facilities used for knowledge/theory instruction:

H11.a are arranged for large group instruction, demonstration, presentations, etc.

☐ H11.a

H11.b include individual learning stations and/or study locations.

☐ H11.b

0=not at all
1=low extent
2=moderate ext
3=high extent

DESCRIPTORS

H12 The physical facilities used for performance instruction:

H12.a are arranged for large group instruction, demonstration, presentations, etc. ☐ H12.a

H12.b include individual learning stations and/or study locations. ☐ H12.b

H13 Supplemental instructional materials and/or equipment.

H13.a are stored adjacent to or in close proximity to student learning stations. ☐ H13.a

H13.b are housed in a separate facility or school area. ☐ H13.b

H14 Instructors do not receive released time nor pay for planning materials production. ☐ H14

H15 Instructors are given released time or paid for the time required in planning materials production and similar curriculum activities. ☐ H15

H16 Instructors use curriculum specialists in designing and producing program materials. ☐ H16

H17 There is no curriculum specialist available to assist instructors with materials production. ☐ H17

DESCRIPTORS	0=not at all 1=low extent 2=moderate ext. 3=high extent
H18 Instructors use audio-visual specialists in producing learning materials.	☐ H18
H19 There is no audio-visual specialist available to assist instructors with materials production.	☐ H19

SITE VISITORS

INTERVIEW OUTLINE

PROGRAM VISITOR ______________________________
PRINT Name

PROGRAM VISITED: ______________________________
School

____
Program Name

____
Instructor(s)

Background Information

1. The students are: (check)
Postsecondary only

Secondary only

Both Postsecondary & Secondary

2. How many students are enrolled now?

______ Postsecondary ______ Secondary

Typically how many students are enrolled?

______ Postsecondary ______ Secondary

3. About what % of the postsecondary students are full time? ______

4. What occupations/jobs do students get when they complete the program? (list)

____

____

____

____

____

Interview Check Sheet

Instructors use a wide range of instructional strategies depending upon the occupational area and many other factors.

Would you give me an overview of your program and how it operates?

What about____________________?

How do students______________?

How did/do you_________________?

Can you tell me
more about____________________?

Focus on instructional strategies for knowledge/theory	Source Code	instructor I	students S	materials M	other indicate
How instructor works with students.					
group-individual					
How students know what what to do?					
amount of time on task.					
Faster students					
Slower students					
Instruction materials					
a) learning guides					
b) text books					
c) work books/lab manuals					
d) modules					
e) simulation: models, role play, etc.					
f) A-V					

How materials are used.

Why materials are changed.

What about____________________?

How did/do you________________?

How do students_______________?

Can you tell me more about____________________?

Focus on instructional strategies for tasks/ skills (performance)	Source Code	Instructor I	Student S	Materials M	Other indicate
How instructor works with students.					
group-individual					
How students know what to do.					
amount of time on task. (practice)					
Faster students					
Slower students					
Instructional materials					
a) learning guides					
b) text books					
c) work books/ lab manuals					
d) modules					
e) simulation: models, role play, etc..					
f) A-V					

Live work (clinic, shops, coop, etc.)

how assigned.

Why instructional materials are changed.

What about____________________?

How do/did you________________?

How do students______________?

Can you tell me more about______________?

Focus on Individualization	Source	Instructor	Student	Materials	Other
	Code	I	S	M	Indicate
Students with previous training/experience (test out - full program)					
Selection of alternative methods of learning.(different materials, etc. for same knowledge/skills).					
Individual plans					
Can students select part of the program? (Career objectives)					
When are students considered to be completers?					

What about ____________________?

How do/did you ________________?

How do students ______________?

Can you tell me more about ________________?

Content Specification	Source Code	Instructor I	Student S	Materials M	Other Indicate
Instructors					
tasks/skill list (get copies or samples)					
How list (content) was derived.					
V-TECHS, published sources,					
texts					
instructor exp.					
job analysis					
instructor comm.					
How list was reviewed?					
advisory comm.					
local workers					
instructor contact					
committee of instructors.					
instructor.					
How list is updated?					
advisory comm.					
local workers.					
instructor contact.					
committee of instructors					
instructor					

Students

How students get information on content

copies of list

instructional materials.

instructor tells

Student access to information.

What about____________________?

How do/did you__________________?

How do students______________?

Can you tell me mare about____________________?

Assessment of Knowledge/Theory	Source Code	Instructor I	Students S	Materials M	Other Indicate
Instructor					
(Get copies or samples of tests)					
How & when testing is done.					
How tests are constructed.					
type of items					
how test content selected and why?					
What is passing level and how level was selected.					
How tests results are reviewed with students?					
Is retesting allowed?					
When and why test are changed.					

Students

How and when testing is done.

Access to list of required knowledge skills.

What to expect when tests are taken.

Retesting.

How tests are critiqued?

What kinds of things are included on written tests?

What about____________________?

How did/do you________________?

How do students______________?

Can you tell me mare about__________________?

Assessment Tasks/Skills	Source Code	Instructor I	Student S	Materials M	Other indicate
Instructor (get sample check lists, etc.)					
When & how student performance is assessed (only by the instructor?)					
(averaging)					
How performance is critiqued.					
How criteria for satisfactory performance were derived.					
How is satisfactory student performance determined.					
Retesting					
Why and when performance tests are changed.					

Students

Access to task description and criteria

Can describe what is required to pass?

How tests are taken, when scheduled.

How critiqued

Retesting.

What about____________________?

How did/do you________________?

How do students_______________?

Can you tell me more about_______________?

Grading	Source Code	Instructor I	Student S	Materials M	Other Indicate
How employability skills are assessed and reported.					
What kind of grading.					
How grades are determined.					
Are scores averaged and how averaging is done.					

What about____________________?

How did/do you____________________?

How do students____________________?

Can you tell me more about____________________?

Program Management	Source	Instructor	Student	Materials	Other
	Code	I	S	M	Indi-cate
Program progress sheets and student accessibility.					
When & how progress sheets are updated.					
When students start.					
Is orientation conducted and how.					
When students complete the program.					
Instructor time for program development.					
Released time					
Extra pay					
Use of curriculum specialists					
Use of A-V specialists.					
Arrangement of physical facilities.					
knowledge/theory & tasks/skills.					

APPENDIX B

Scoring Instructions

SCORING FOR
PROGRAM DESCRIPTION INSTRUMENT

Directions: The ratings recorded for the indicaters contained in the instrument are used to form eight (8) scaled scores. A one or two page scoring sheet is used for calculating each of the scaled scores. The following four-step process is used for each calculation.

Step One: Record the ratings for each of the scale items in the appropriate box ☐ on the scoring sheet.

Step Two: Multiply each item rating by the item weight and record the product in the corresponding circle ○.

Step Three: Add the numbers recorded in circles of the CBE column and record the total. Add the numbers recorded in the circles of the conventional column and record the total.

Step Four: Record the two totals in the designated position of the scaled score equation. Then ADD the "fixed number" to the CBE total and subtract the conventional score. Record the result in the box for the scaled score.

EXAMPLE:

Scale Y: SAMPLE SCALE

ITEM	RATING		(WEIGHT)		CBE	CONVEN-TIONAL
Y1	2	x	3	=	6	
Y2	1	x	2	=		2
Y3.a	2	x	0	=	-	-
Y3.b	3	x	1	=	3	-
Y4	3	x	3	=	-	9
Y5	2	x	1	=	2	-
			Total CBE		11	Total Conven 11

Scale Score = 15 + 11 - 11 = 15

Scale Y Score

SCALE A KNOWLEDGE INSTRUCTION

Item	Rating		(Weight)		CBE	Conventional
A1	☐	x	3	=	○	
A2	☐	x	3	=		○
A3	☐	x	3	=	○	
A4	☐	x	3	=		○
A5.a	☐	x	3	=	○	
A5.b	☐	x	3	=		○
A6.a	☐	x	3	=	○	
A6.b	☐	x	2	=		○
A6.c	☐	x	3	=		○
A7.a	☐	x	3	=	○	
A7.b	☐	x	3	=		○
A8.a	☐	x	3	=	○	
A8.b	☐	x	3	=		○
A9.a	☐	x	2	=	○	
A9.b	☐	x	0	=	-	-

Total CBE ○ Total Conven ○

Scale Score = 60 + ○ - ○ = ☐

Scale A Score

SCALE B PERFORMANCE INSTRUCTION

Item	Rating		(Weight)		CBE	Conventional
B1	☐	x	3	=	○	
B2	☐	x	3	=		○
B3	☐	x	3	=	○	
B4	☐	x	3	=		○
B5	☐	x	3	=		○
B6	☐	x	3	=	○	
B7.a	☐	x	3	=	○	
B7.b	☐	x	2	=		○
B7.c	☐	x	2	=		○
B8.a	☐	x	3	=	○	
B8.b	☐	x	3	=		○
B9.a	☐	x	3	=	○	
B9.b	☐	x	0	=	-	-
B9.c	☐	x	2	=		○
B10.a	☐	x	3	=	○	
B10.b	☐	x	3	=		○
B10.c	☐	x	2	=		○
B11.a	☐	x	2	=	○	
B11.b	☐	x	1	=	○	
B11.c	☐	x	2	=		○
B12.a	☐	x	2	=		○
B12.b	☐	x	2	=	○	
B13.a	☐	x	2	=		○
B13.b	☐	x	2	=	○	

Total CBE ○ Total Conven ○

Scale Score = 84 + ○ - ○ = ☐

Scale B Score

SCALE C INDIVIDUALIZATION

Item	Rating		(Weight)		CBE	Conventional
C1	☐	x	3	=	○	
C2	☐	x	3	=		○
C3.a	☐	x	3	=		○
C3.b	☐	x	3	=	○	
C3.c	☐	x	1	=	○	
C3.d	☐	x	3	=	○	
C3.e	☐	x	1	=	○	
C3.f	☐	x	0	=	-	-
C3.g	☐	x	1	=		○
C3.h	☐	x	1	=	○	
C4.a	☐	x	3	=		○
C4.b	☐	x	3	=	○	
C4.c	☐	x	1	=	○	
C4.d	☐	x	3	=	○	
C4.e	☐	x	1	=	○	
C4.f	☐	x	1	=	○	
C4.g	☐	x	1	=		○
C4.h	☐	x	1	=	○	
C5.a	☐	x	2	=		○
C5.b	☐	x	2	=	○	
C6.a	☐	x	3	=	○	
C6.b	☐	x	3	=		○
				Total Individ	○	Total Conven ○

Scale Score = 37 + ○ - ○ = ☐

Scale C Score

SCALE D PROGRAM CONTENT SPECIFICATION

Item	Rating		(Weight)		CBE	Conventional
D1.a	☐	x	3	=	○	
D1.b	☐	x	3	=		○
D2.a	☐	x	3	=	○	
D2.b	☐	x	3	=	○	
D2.c	☐	x	3	=		○
D2.d	☐	x	2	=		○
D3.a	☐	x	3	=	○	
D3.b	☐	x	3	=	○	
D3.c	☐	x	2	=		○
D3.d	☐	x	2	=		○
D4.a	☐	x	2	=	○	
D4.b	☐	x	2	=		○
D4.c	☐	x	1	=		○
D4.d	☐	x	3	=	○	
D4.e	☐	x	2	=		○
D5.a	☐	x	2	=	○	
D5.b	☐	x	2	=	○	
D5.c	☐	x	0	=	-	-
D5.d	☐	x	2	=		○
D5.e	☐	x	2	=		○

Sub-Total CBE ○ (carry to next page)

Sub-total conven ○ (carry to next page)

					Sub-total from previous page	Sub-total from previous page
					○	○
Item	Rating		(Weight)		CBE	Conventional
D6.a	☐	x	2	=	○	
D6.b	☐	x	2	=	○	
D6.c	☐	x	0	=	-	-
D6.d	☐	x	1	=		○
D6.e	☐	x	2	=		○
D7.a	☐	x	3	=	○	
D7.b	☐	x	3	=		○
D8	☐	x	2	=		○
D9	☐	x	3	=		○
D10	☐	x	3	=	○	
				Total CBE	○	Total Conven ○

Scale Score = 99 + ○ - ○ = ☐

Scale D Score

SCALE E KNOWLEDGE ASSESSMENT

Item	Rating		(Weight)		CBE	Conven-tional
E1	☐	x	3	=	○	
E2	☐	x	3	=		○
D3	☐	x	3	=	○	
E4	☐	x	3	=		○
E5	☐	x	2	=		○
E6	☐	x	3	=	○	
E7	☐	x	2	=		○
E8	☐	x	3	=	○	
E9	☐	x	3	=	○	
E10	☐	x	3	=		○
E11	☐	x	2	=	○	
E12	☐	x	3	=		○
E13	☐	x	3	=	○	
E14	☐	x	3	=		○

Total CBE ○ Total Conven ○

Scale Score = 60 + ○ - ○ = ☐

Scale E Score

SCALE F PERFORMANCE ASSESSMENT

Item	Rating		(Weight)		CBE	Conventional
F1	☐	x	3	=	○	
F2	☐	x	2	=		○
F3	☐	x	2	=		○
F4.a	☐	x	2	=		○
F4.b	☐	x	3	=	○	
F4.c	☐	x	2	=		○
F5	☐	x	3	=	○	
F6	☐	x	3	=		○
F7	☐	x	2	=		○
F8	☐	x	3	=	○	
F9	☐	x	3	=		○
F10	☐	x	2	=		○
F11	☐	x	2	=	○	
F12	☐	x	2	=		○
F13	☐	x	3	=	○	
F14	☐	x	3	=	○	
F15	☐	x	2	=		○
F16	☐	x	3	=	○	
F17	☐	x	2	=	○	
F18	☐	x	3	=		○
F19	☐	x	2	=	○	

Total CBE ○ Total Conven ○

Scale Score = 75 + ○ - ○ = ☐

Scale F Score

SCALE G GRADING

Item	Rating		(Weight)		CBE	Conventional
G1.a	☐	x	1	=	○	
G1.b	☐	x	1	=		○
G2	☐	x	3	=		○
G3	☐	x	3	=	○	
G4	☐	x	3	=		○
G5	☐	x	2	=	○	
G6	☐	x	2	=		○
G7	☐	x	3	=	○	

Total CBE ○ Total Conven ○

Scale Score = 27 + ○ - ○ = ☐

Scale G Score

SCALE H RELATED FACTORS

Item	Rating		(Weight)		CBE	Conventional
H1	☐	x	2	=	○	
H2	☐	x	2	=		○
H3	☐	x	2	=	○	
H4.a	☐	x	3	=		○
H4.b	☐	x	3	=	○	
H5.a	☐	x	3	=	○	
H5.b	☐	x	3	=		○
H6.a	☐	x	3	=	○	
H6.b	☐	x	3	=		○
H7	☐	x	2	=	○	
H8	☐	x	3	=		○
H9	☐	x	3	=		○
H10	☐	x	3	=	○	
H11.a	☐	x	3	=		○
H11.b	☐	x	3	=	○	
H12.a	☐	x	3	=		○
H12.b	☐	x	3	=	○	
H13.a	☐	x	2	=	○	
H13.b	☐	x	2	=		○

Sub-Total CBE ○ (carry to next page)

Sub-total conven ○ (carry to next page)

Sub-total from previous page ○

Sub-total from previous page ○

Item	Rating		(Weight)		CBE	Conven-tional
H14	☐	x	1	=	-	○
H15	☐	x	1	=	○	-
H16	☐	x	2	=	○	-
H17	☐	x	2	=	-	○
H18	☐	x	1	=	○	-
H19	☐	x	1	=	-	○

Total CBE ○ Total Conven ○

Scale Score = 87 + ○ - ○ = ☐

Scale H Score

PREPARING THE
PROGRAM PROFILE

Directions: The program profile sheet contains a numerical graph for each scale.

Plot the scale score for each of the eight scales on the appropriate scale. Note that each scale is based on a specific range of potential scores. Use care in placing a readable mark for each scale score. A sample profile is included on the next page.

Each scale is divided into five ranges:

mostly conventional
moderately conventional
mixed
moderately CBE
mostly CBE.

An examination of the profile can be useful in identifying areas in which a specific program may wish to make modifications. The purposes for modification might be

a) to provide a program that is more internally consistent.
b) to move toward one type of program.

Ratings of individual items can provide an indicator of specific aspects of the program that might be considered as a goal for modification.

Note: Scale H and some items of scale G deal with specific conditions and procedures that are often more controlled by the institution than the program instructor. Scores on these scales and the specific items on these scales may be useful for discussion of specific institutional policies and/or services that might be appropriate for institutional modification.

PROGRAM PROFILE

INSTITUTION NAME Smith AVC PROGRAM NAME Welding

SCALE A KNOWLEDGE INSTRUCTION 18

```
Mostly Conventional  Moderately Convent.     Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o............●....o.................o.................o.................o.................o
0       12       24       36       48       60       72       84       96      108      120
```

SCALE B PERFORMANCE INSTRUCTION 117

```
Mostly Conventional  Moderately Convent.     Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.................o........●........o.................o
0       17       35       51       70       84       98      117      133      151      168
```

SCALE C INDIVIDUALIZATION 42

```
Mostly Conventional  Moderately Convent.     Mixed    Moderately Individual. Mostly Individualized
o.................o.................o.................o.................o.................o
o.................o.................o..●..............o.................o.................o
0       10       20       30       40       48       56       66       76       86       96
```

SCALE D PROGRAM CONTENT SPECIFICATION 25

```
Mostly Conventional  Moderately Convent.     Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.........●.......o.................o.................o.................o.................o
0       21       42       62       83      100      117      137      158      179      198
```

SCALE E KNOWLEDGE ASSESSMENT 36

```
Mostly Conventional  Moderately Convent.     Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o........●........o.................o.................o.................o
0       12       24       36       48       60       72       84       96      108      120
```

SCALE F PERFORMANCE ASSESSMENT 125

```
Mostly Conventional  Moderately Convent.     Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.................o.................o...●.............o
0       16       32       47       63       75       88      104      120      131      156
```

SCALE G GRADING 27

```
Mostly Conventional  Moderately Convent.     Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o........●........o.................o.................o
0        6       12       17       22       27       32       37       42       48       54
```

SCALE H RELATED FACTORS 60

```
Mostly Conventional  Moderately Convent.     Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o...........●.....o.................o.................o.................o
0       18       36       54       73       87      101      120      138      156      174
```

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APPENDIX C

Frequency Distribution for Experts' Judgment of Items

FREQUENCY DISTRIBUTIONS

Means, Medians, and Weightings

FOR EXPERTS' JUDGMENT OF ITEMS

NOTE: *indicates rating not used in calculating mean or median

#indicates the item weight was adjusted to balance the scale

RATINGS BY SELECTED EXPERTS

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A1	f										1	3	5	5	-	5.00	5.01	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A2	f	8	3	2											1	-5.46	-5.69	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A3	f											1	4	9	-	5.57	5.77	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A4	f	6	2	2	1			1*	1*		1*				-	-4.75	-5.50	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A5.a	f										1		3	10		5.57	5.80	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A5.b	f	11		1	1	1										-5.36	-5.86	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A6.a	f	1								1	3		5	4		4.61	5.00	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A6.b	f	1	1	3	4	2		2					1			-3.00	-3.85	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A6.c	f	8	5										1			-5.62	- 5.69	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A7.a	f									1			4	9		5.43	5.72	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A7.b	f	7	6		1											- 5.36	- 5.50	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A8.a	f										1	1	4	8		5.38	5.63	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A8.b	f	7	4	1	1			1								- 4.93	- 5.50	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A9.a	f							3		1	1		2	5	2	3.75	5.0	+2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
A9.b	f	2	2		1		2	5							2	-2.25	-1	0

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B1	f									1		1	5	7		5.21	5.50	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B2	f	6	5			2								1		-3.85	-5.6	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B3	f										2		3	9		5.36	5.72	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B4	f	8	2		3			1								-4.78	-5.63	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B5	f	6	5		2		1									-4.86	-5.4	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B6	f									1			4	9		5.43	5.72	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B7.a	f										1	1	1	11		5.57	5.86	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B7.b	f	4	3	2	3			2								-4.00	-4.50	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B7.c	f	3	1	2	4			4								-3.07	-3.25	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B8.a	f										1		5	8		5.43	5.63	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B8.b	f	8	3		3											-5.14	-5.63	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B9.a	f										2		4	8		5.29	5.63	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B9.b	f		2		1	1		3		1	1		3			0.79	0.5	0

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B9.c	f	1	3	2	3		1	4								-2.79	-3.17	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B10.a	f								1			1	4	8		5.21	5.63	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B10.b	f	6	5	1	2											-5.07	-5.30	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B10.c	f		4	1	3	1		4			1*					-2.69	-3.00	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B11.a	f							3			1	1	4	5		4.07	5.00	+2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B11.b	f		1*					5	1		3		3	1		2.38	2.17	+1

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B11.c	f	4	1	2	1	1	1	4								-3.07	-3.50	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B12.a	f	1	2		4	1	1	2			1*	1*	1*			-2.88	-3.88	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B12.b	f		2*					2			1	3	3	3		4.00	4.5	+2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B13.a	f		5	1	2	2	1	3								-2.86	-3.0	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B13.b	f							3			3	1	5	2		3.57	4.50	+2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C1	f											2	5	7		5.36	5.5	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C2	f	6	6	-	2											-5.14	-5.33	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C3.a	f	8	2	4												-5.29	-5.63	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C3.b	f												4	10		5.71	5.80	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C3.c	f						1*	6	-	-	3	1	1	2		2.30	1.00	+1

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C3.d	f							1	1	-	-	-	7	5		4.71	5.21	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C3.e	f							1	2	1	1	4	3	2		3.57	4.00	+1#

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C3.f	f						1*	7	-	-	1	2	1	2		2.15	0.5	0

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C3.g	f	1	1	-	5	-	-	6						1*		-2.00	-1.00	-1

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C3.h	f							6	-	2	2	1	1	2		2.21	1.50	+1

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C4.a	f	6	6	2												-5.29	-5.33	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C4.b	f												5	9		5.64	5.79	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C4.c	f							5	-	1	3	1	2	2		2.64	2.88	+1#

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C4.d	f		1*					1	-	1	-	-	6	5		4.77	5.25	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C4.e	f							3	1	1	2	3	1	3		3.14	3.50	+1#

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C4.f	f				1*		1*	6	-	-	1	3	1	1		2.17	0.50	+1

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C4.g	f	1	2	-	4	1	1	5								-2.21	-2.50	-1

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C4.h	f							6	-	-	2	-	3	3		2.79	3.0	+1

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C5.a	f	3	3	2	1	1	1	2			1*					3.46	4.25	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C5.b	f								1	1	2	5	1	4		4.14	4.10	+2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C6.a	f							1	-	-	-	1	5	7		5.07	5.50	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
C6.b	f	9	3	1	1											- 5.43	-5.72	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D1.a	f										2	1	2	9		5.29	5.72	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D1.b	f	7	4	1	2											-5.14	-5.50	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D2.a	f										1	1	3	9		5.43	5.72	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D2.b	f					1*		1	-	-	1	2	2	7		4.85	5.57	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D2.c	f	5	4	1	1	-	-	3								-4.07	-5.50	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D2.d	f	2	5	2	3	-	-	2								-3.86	-4.50	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D3.a	f										1	1	4	8		5.36	5.63	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D3.b	f									1	1	-	4	8		5.21	5.63	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D3.c	f	4	2	1	3	1	-	2				1*				-3.77	-4.0	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D3d	f	2	5	2	3	1	-	1								-4.00	-4.5	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D4.a	f							1	-	-	1	3	4	5		4.64	5.00	+2#

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D4.b	f	2	4	3	4	-	-	1								-4.00	-4.17	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D4.c	f	1	3	2	-	2	-	5		1*		1*				-2.42	-1.5	-1

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
B4.d	f							1	-	-	4	1	2	6		4.43	5.00	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D4.e	f	1	5	-	-	2	-	4		1*	1*					-2.92	-3.5	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D5.a	f							3	-	2	3	4	1	1		2.86	3.17	+2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D5.b	f							2	2	1	1	1	4	3		3.50	4.50	+2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D5.c	f		1*	1*	1*			4	3	-	2	2	-	-		1.55	1.0	0

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D5.d	f	2	2	4		1	1	4			2*					-2.75	-3.0	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D5.e	f	3	2	1	1	2		4			1*					-3.00	-3.00	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D6.a	f							4		2	2	1	4	1		4.71	3.0	+2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D6.b	f							2	3		2	2	3	2		3.14	3.50	+2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D6.c	f			1	1	1	2	6	1		2					-0.21	0	0

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D6.d	f	1	2	1	1	1		5	1*		2*					-2.27	-0.5	-1

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D6.e	f	3	1	2	1	2		4			1*					-2.92	-3.0	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D7.a	f											1	6	7		5.43	5.50	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D7.b	f	3	6	1		1		3								-3.86	-4.83	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D8	f	3	3	3	2			1		1*					1*	-4.25	-4.50	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D9	f	3	7		1	1		2								-4.14	-4.93	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
D10	f											3	5	6		5.21	5.30	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E1	f							1		2	1	1	3	6		4.43	5.17	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E2	f	5	3		3	2	1									-4.21	-4.83	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E3	f							1		2		3	6	2		4.14	4.67	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E4	f	7	4			1		2								-4.57	-5.50	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E5	f	4	2	1	2	1		2				1*		1*		-3.83	-4.5	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E6	f							2	1		1	2	2	6		4.14	5.00	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E7	f	5	3		3	1	1	1								-4.07	-4.83	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E8	f										2		5	7		5.21	5.50	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E9	f												4	10		5.71	5.80	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E10	f	8	4	1	1											-5.36	-5.63	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E11	f							1		1	2	3	4	3		4.14	4.50	+2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E12	f	5	3	5		1										-4.79	-4.83	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E13	f		1*					1		1	1	1	4	5		4.54	5.13	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
E14	f	8	4	1	1											-5.36	-5.64	-3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
F1	f							1			1	1	4	7		4.93	5.50	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
F2	f	3	3	4	1	1	1	1								-3.93	-4.25	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
F3	f	2	4	2	3	2	1									-3.86	-4.00	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
F4.a	f	2	4	4	2		1						1*			-4.23	-4.36	-2

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
F4.b	f										2	1	3	8		5.21	5.68	+3

Item		Conventional							CBVE						NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
F4.c	f	2	3	1	1	1		4								-3.00	-3.50	-2

Item															NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
F5	f								1		1	2	4	6		4.86	5.25	+3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F6	f	7	4	2			1									-5.07	-5.50	-3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F7	f	4	2	2	1		1	2			1*	1*				-3.83	-4.50	-2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F8	f										1		4	9		4.79	5.72	+3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F9	f	5	4	1	3											-4.85	-5.13	-3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F10	f	3	4	2	3	1	1									-4.1	-4.50	-2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F11	f							2			2	3	2	5		4.36	4.50	+2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F12	f	2	3	2	3	2	2									-3.57	-3.50	-2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F13	f										1	2	4	7		5.21	5.50	+3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F14	f									1	1		4	8		5.21	5.63	+3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F15	f	3	3	3	2	1	1	1								-3.86	-4.17	-2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F16	f										1	3	4	6		5.07	5.25	+3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F17	f				1*			2		2	2	1	2	4		3.69	4.00	+2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F18	f	3	3	4	2	1	1									-4.14	-4.25	-3#

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
F19	f							3		1	1	5	2	2		3.36	3.90	+2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
G1.a	f				1*			7			1	1	1	3		2.31	0.36	+1

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
G1.b	f	1	1		3		1	6	1*				1*			-1.75	-0.5	-1

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
G2	f	7	2	2	2			1								-4.71	-5.5	-3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
G3	f										1	1	4	8		5.36	5.63	+3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
G4	f	6	4	2	2											-5.00	-5.25	-3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
G5	f	1*	1*	1*				1	1		3	2	3	1		3.55	4.00	+2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
G6	f	2	3	3	5			1								-3.86	-3.83	-2

Item															NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
G7	f											2	3	9		5.50	5.72	+3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H1	f							1		1	2	1	2	7		4.57	5.50	+2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H2	f	4	1	2	4	3										-3.93	-3.50	-2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H3	f										2	4	2	6		4.86	5.00	+2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H4.a	f	8	5		1											-5.43	-5.75	-3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H4.b	f										2	1	5	6		5.07	5.30	+3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H5.a	f							1				1	3	9		5.21	5.72	+3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H5.b	f	9	2					3								-4.57	-5.72	-3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H6.a	f										1	1	3	9		5.43	5.72	+3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H6.b	f	7	3	1	1											-4.57	-5.50	-3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H7	f							1			2	1	4	6		4.71	5.25	+2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H8	f	3	2	2	3		1	2						1*		-3.54	-3.25	-3#

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H9	f	6	6	1	1											-5.21	-5.33	-3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H10	f												4	10		5.71	5.80	+3

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H11.a	f	9	4	1												-5.57	-5.83	-3

Item															NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
H11.b	f											4	4	6		5.14	5.25	+3

Item															NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
H12.a	f	4	5	4		1										-4.79	-4.90	-3

Item															NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
H12.b	f											3	4	6		5.07	5.25	+3

Item															NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
H13.a	f							2		2	1	1	3	5		4.00	4.83	+2

Item															NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
H13.b	f	2	1	4	3	1		3								-3.14	-3.50	-2

Item															NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
H14	f	2	2	1			1	8								-1.92	-0.38	-1

Item															NR	Mean	Mdn	Value Assign
	Score	6	5	4	3	2	1	0	1	2	3	4	5	6				
H15	f							7		1	1	1	2	2		2.21	1.00	+1

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H16	f							6		1		2	3	2		2.64	3.00	+2

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H17	f	1	2		2	3	1	5								-2.07	-1.83	-2#

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H18	f		1	2	3	1		7								1.71	1.00	+1

Item	Score	6	5	4	3	2	1	0	1	2	3	4	5	6	NR	Mean	Mdn	Value Assign
H19	f		1		3	3	1	6								-1.5	-1.5	-1

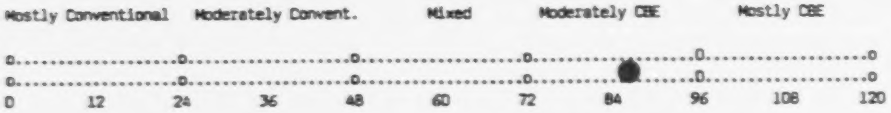
APPENDIX D

Program Profiles
for Sixteen Welding Programs

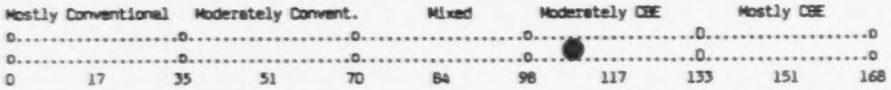
PROGRAM PROFILE

INSTITUTION NAME #1 PROGRAM NAME Welding

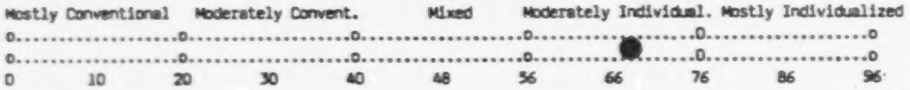
SCALE A KNOWLEDGE INSTRUCTION 88



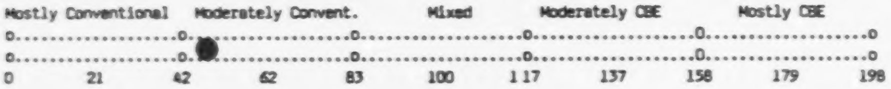
SCALE B PERFORMANCE INSTRUCTION 108



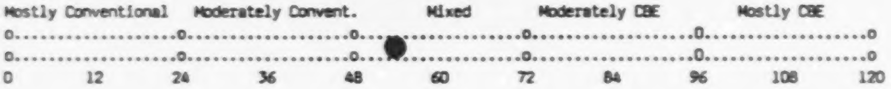
SCALE C INDIVIDUALIZATION 68



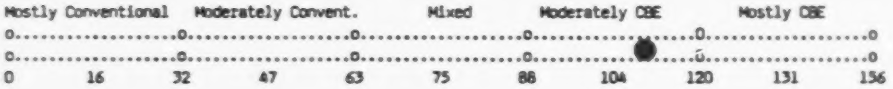
SCALE D PROGRAM CONTENT SPECIFICATION 46



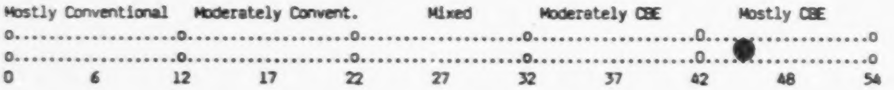
SCALE E KNOWLEDGE ASSESSMENT 54



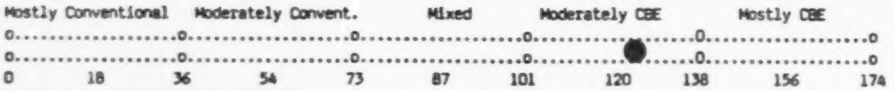
SCALE F PERFORMANCE ASSESSMENT 114



SCALE G GRADING 45



SCALE H RELATED FACTORS 123



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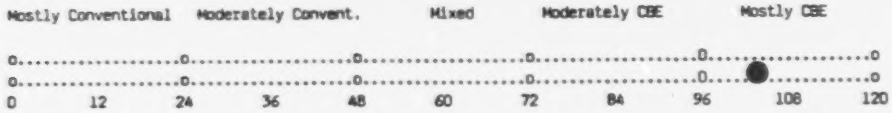
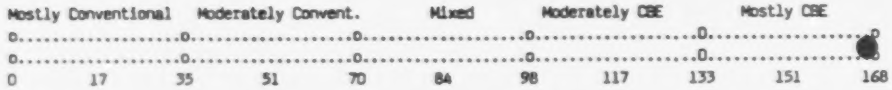
P R O G R A M   P R O F I L E

INSTITUTION NAME #2   PROGRAM NAME Welding

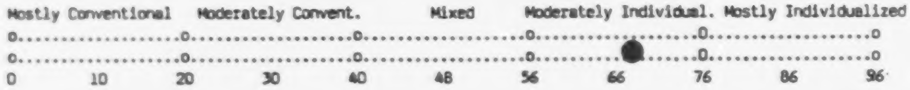
SCALE A KNOWLEDGE INSTRUCTION 104



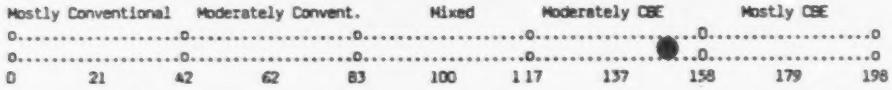
SCALE B PERFORMANCE INSTRUCTION 168



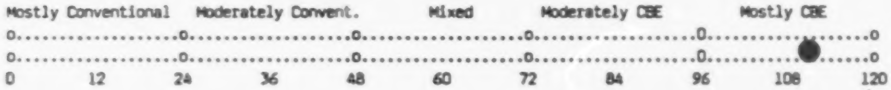
SCALE C INDIVIDUALIZATION 67



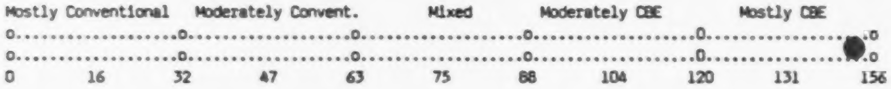
SCALE D PROGRAM CONTENT SPECIFICATION 152



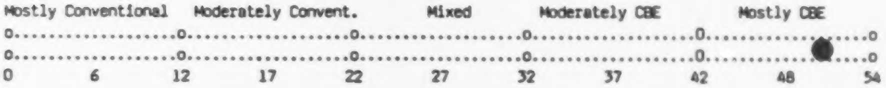
SCALE E KNOWLEDGE ASSESSMENT 114



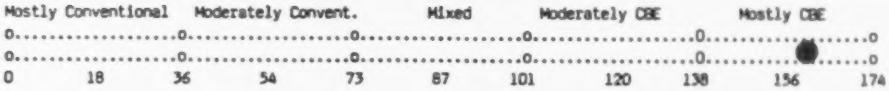
SCALE F PERFORMANCE ASSESSMENT 153



SCALE G GRADING 52



SCALE H RELATED FACTORS 161



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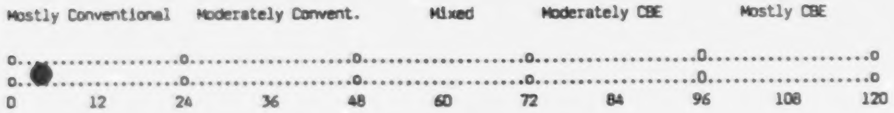
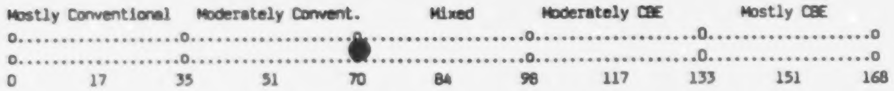
PROGRAM PROFILE

INSTITUTION NAME #3 PROGRAM NAME Welding

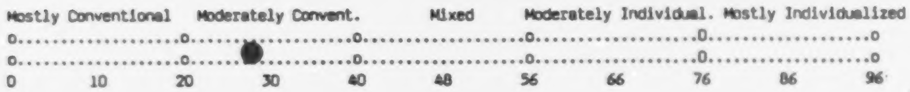
SCALE A KNOWLEDGE INSTRUCTION 4



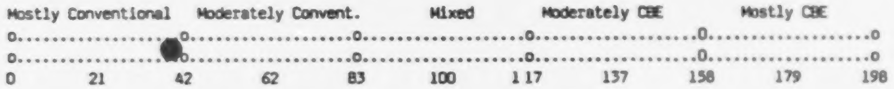
SCALE B PERFORMANCE INSTRUCTION 70



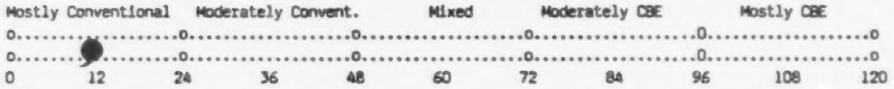
SCALE C INDIVIDUALIZATION 27



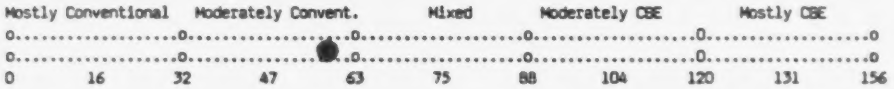
SCALE D PROGRAM CONTENT SPECIFICATION 39



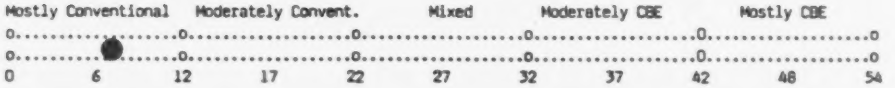
SCALE E KNOWLEDGE ASSESSMENT 11



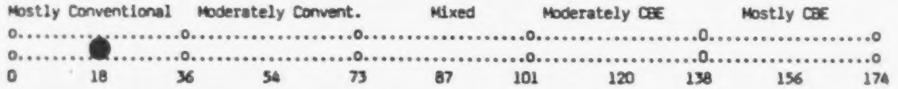
SCALE F PERFORMANCE ASSESSMENT 57



SCALE G GRADING 7



SCALE H RELATED FACTORS 17



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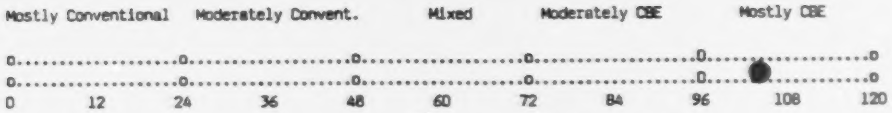
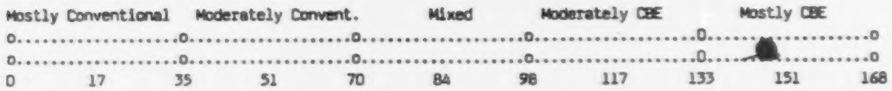
PROGRAM PROFILE

INSTITUTION NAME #4 PROGRAM NAME Welding

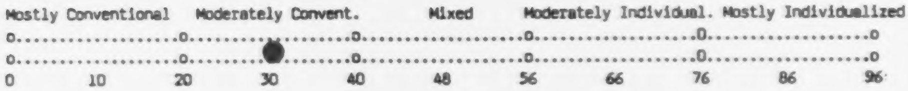
SCALE A KNOWLEDGE INSTRUCTION 104



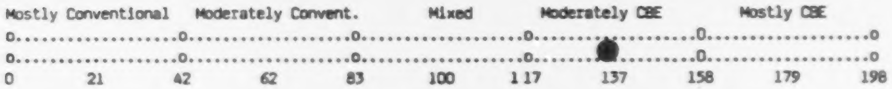
SCALE B PERFORMANCE INSTRUCTION 148



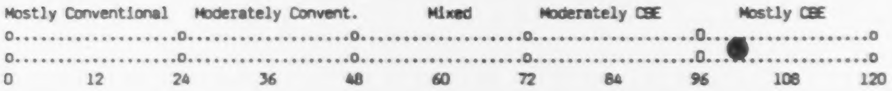
SCALE C INDIVIDUALIZATION 30



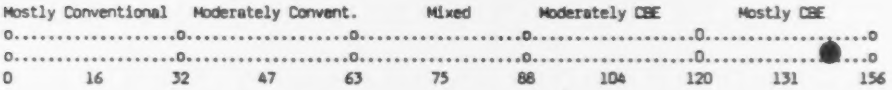
SCALE D PROGRAM CONTENT SPECIFICATION 136



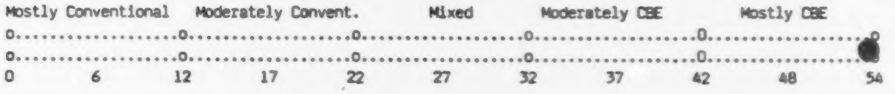
SCALE E KNOWLEDGE ASSESSMENT 101



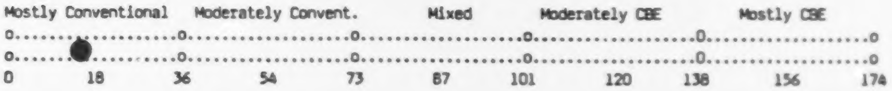
SCALE F PERFORMANCE ASSESSMENT 145



SCALE G GRADING 54



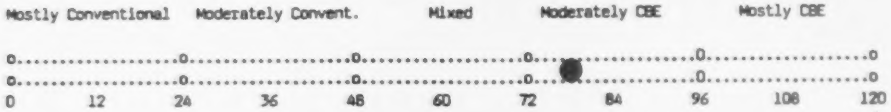
SCALE H RELATED FACTORS 15



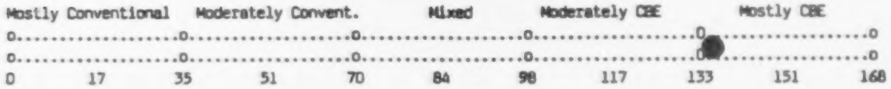
PROGRAM PROFILE

INSTITUTION NAME #5 PROGRAM NAME Welding

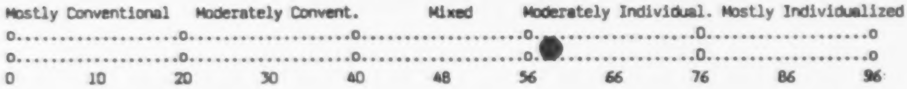
SCALE A KNOWLEDGE INSTRUCTION 76



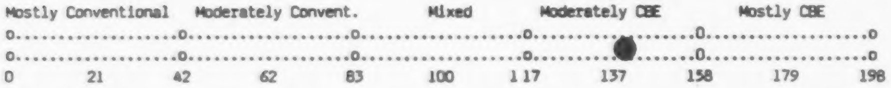
SCALE B PERFORMANCE INSTRUCTION 134



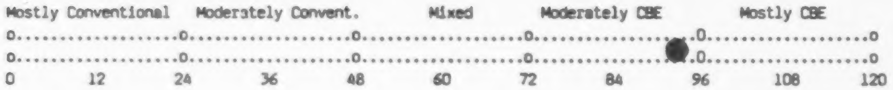
SCALE C INDIVIDUALIZATION 58



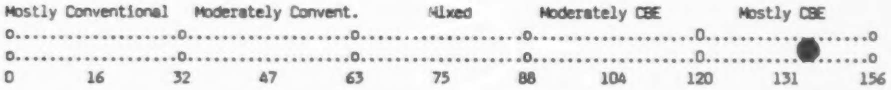
SCALE D PROGRAM CONTENT SPECIFICATION 142



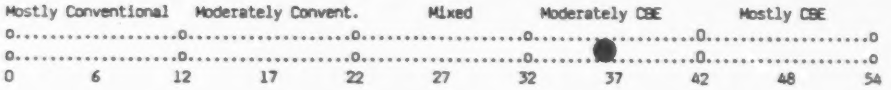
SCALE E KNOWLEDGE ASSESSMENT 93



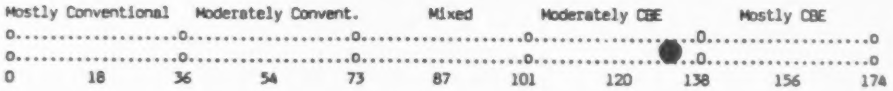
SCALE F PERFORMANCE ASSESSMENT 136



SCALE G GRADING 36



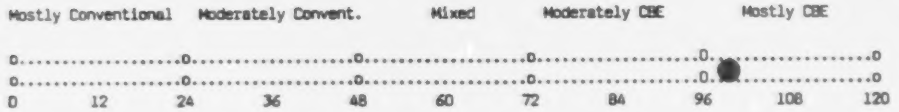
SCALE H RELATED FACTORS 130



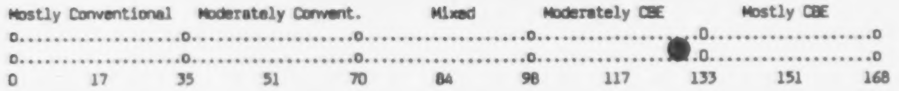
PROGRAM PROFILE

INSTITUTION NAME #6 PROGRAM NAME Welding

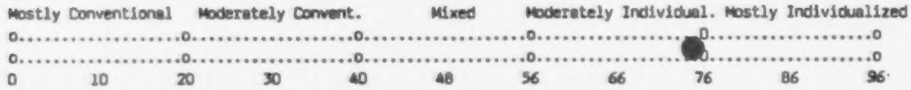
SCALE A KNOWLEDGE INSTRUCTION 99



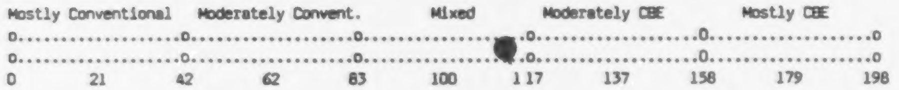
SCALE B PERFORMANCE INSTRUCTION 129



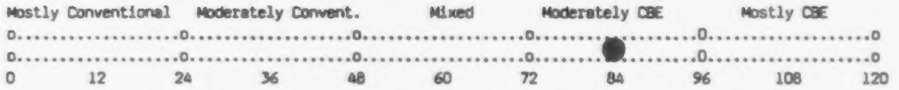
SCALE C INDIVIDUALIZATION 75



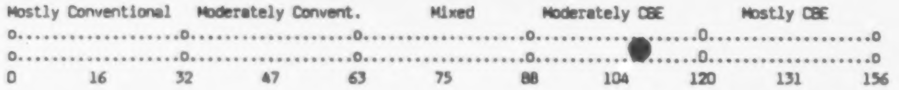
SCALE D PROGRAM CONTENT SPECIFICATION 112



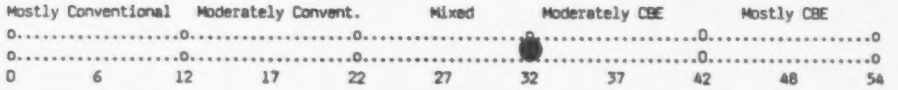
SCALE E KNOWLEDGE ASSESSMENT 84



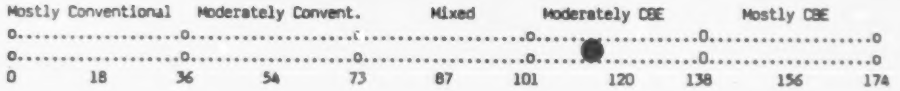
SCALE F PERFORMANCE ASSESSMENT 109



SCALE G GRADING 32



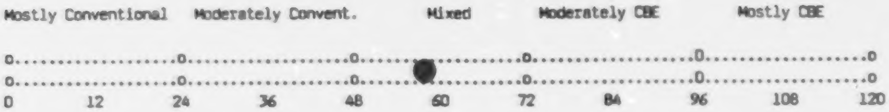
SCALE H RELATED FACTORS 112



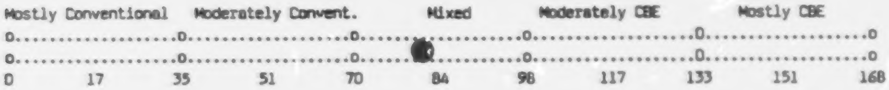
PROGRAM PROFILE

INSTITUTION NAME #7 PROGRAM NAME Welding

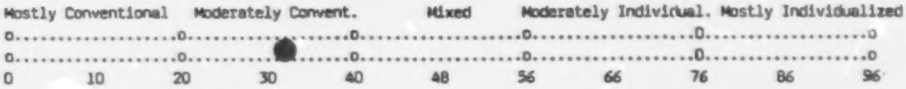
SCALE A KNOWLEDGE INSTRUCTION 58



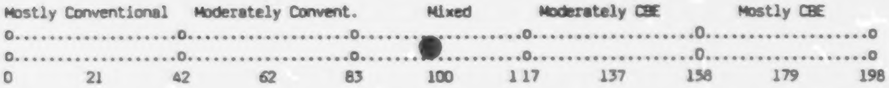
SCALE B PERFORMANCE INSTRUCTION 80



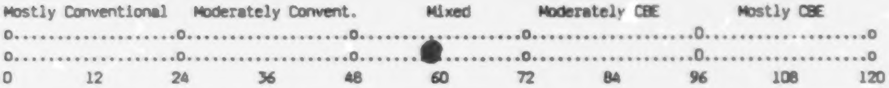
SCALE C INDIVIDUALIZATION 32



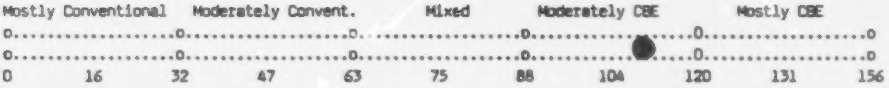
SCALE D PROGRAM CONTENT SPECIFICATION 98



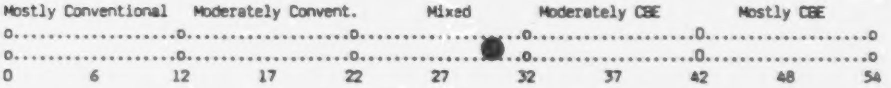
SCALE E KNOWLEDGE ASSESSMENT 59



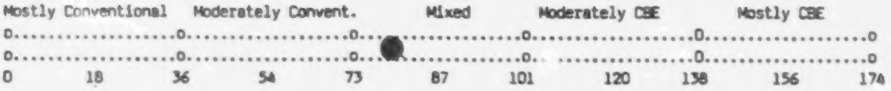
SCALE F PERFORMANCE ASSESSMENT 110



SCALE G GRADING 30



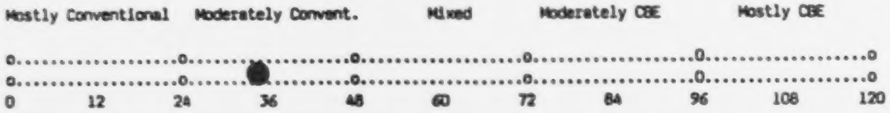
SCALE H RELATED FACTORS 78



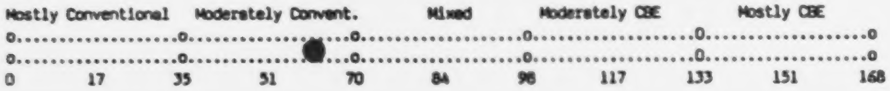
PROGRAM PROFILE

INSTITUTION NAME #8 PROGRAM NAME Welding

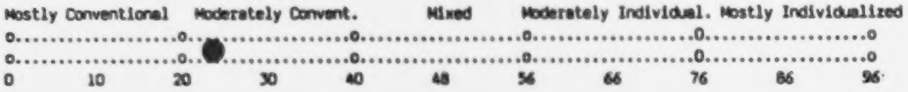
SCALE A KNOWLEDGE INSTRUCTION 33



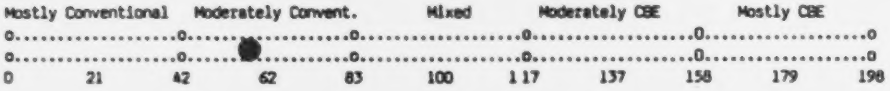
SCALE B PERFORMANCE INSTRUCTION 63



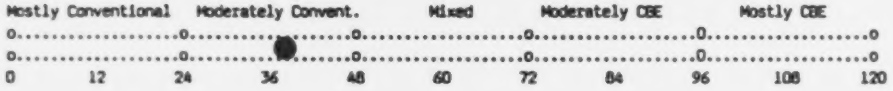
SCALE C INDIVIDUALIZATION 24



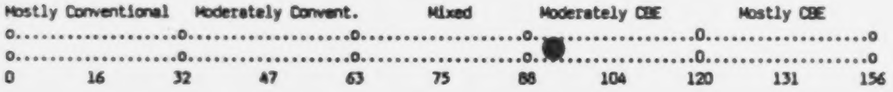
SCALE D PROGRAM CONTENT SPECIFICATION 58



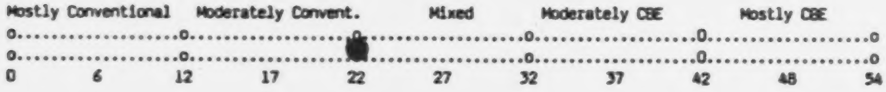
SCALE E KNOWLEDGE ASSESSMENT 38



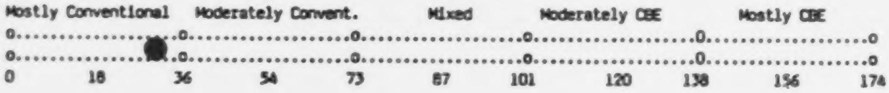
SCALE F PERFORMANCE ASSESSMENT 93



SCALE G GRADING 22



SCALE H RELATED FACTORS 31



PROGRAM PROFILE

INSTITUTION NAME #9 PROGRAM NAME Welding

SCALE A KNOWLEDGE INSTRUCTION 24

```
Mostly Conventional   Moderately Convent.   Mixed      Moderately CBE    Mostly CBE
o.................o.................o.................o.................o.................o
o.................●.................o.................o.................o.................o
0        12       24       36       48       60       72       84       96       108      120
```

SCALE B PERFORMANCE INSTRUCTION 129

```
Mostly Conventional   Moderately Convent.   Mixed      Moderately CBE    Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.................o................●o.................o
0        17       35       51       70       84       98       117      133      151      168
```

SCALE C INDIVIDUALIZATION 48

```
Mostly Conventional   Moderately Convent.   Mixed    Moderately Individual. Mostly Individualized
o.................o.................o.................o.................o.................o
o.................o.................o........●........o.................o.................o
0        10       20       30       40       48       56       66       76       86       96
```

SCALE D PROGRAM CONTENT SPECIFICATION 119

```
Mostly Conventional   Moderately Convent.   Mixed      Moderately CBE    Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.................o●................o.................o
0        21       42       62       83       100      117      137      158      179      198
```

SCALE E KNOWLEDGE ASSESSMENT 29

```
Mostly Conventional   Moderately Convent.   Mixed      Moderately CBE    Mostly CBE
o.................o.................o.................o.................o.................o
o.................o...●.............o.................o.................o.................o
0        12       24       36       48       60       72       84       96       108      120
```

SCALE F PERFORMANCE ASSESSMENT 119

```
Mostly Conventional   Moderately Convent.   Mixed      Moderately CBE    Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.................o.................●.................o
0        16       32       47       63       75       88       104      120      131      156
```

SCALE G GRADING 25

```
Mostly Conventional   Moderately Convent.   Mixed      Moderately CBE    Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o..●..............o.................o.................o
0        6        12       17       22       27       32       37       42       48       54
```

SCALE H RELATED FACTORS 54

```
Mostly Conventional   Moderately Convent.   Mixed      Moderately CBE    Mostly CBE
o.................o.................o.................o.................o.................o
o.................o........●........o.................o.................o.................o
0        18       36       54       73       87       101      120      138      156      174
```

P R O G R A M   P R O F I L E

INSTITUTION NAME #10   PROGRAM NAME Welding

SCALE A KNOWLEDGE INSTRUCTION 108

```
Mostly Conventional   Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.................o.................o........●........o
0       12        24       36       48       60       72       84       96      108      120
```

SCALE B PERFORMANCE INSTRUCTION 139

```
Mostly Conventional   Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.................o.................o...●.............o
0       17        35       51       70       84       98      117      133      151      168
```

SCALE C INDIVIDUALIZATION 68

```
Mostly Conventional   Moderately Convent.      Mixed   Moderately Individual. Mostly Individualized
o.................o.................o.................o.................o.................o
o.................o.................o.................o..........●......o.................o
0       10        20       30       40       48       56       66       76       86       96
```

SCALE D PROGRAM CONTENT SPECIFICATION 129

```
Mostly Conventional   Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.................o.....●...........o.................o
0       21        42       62       83      100      117      137      158      179      198
```

SCALE E KNOWLEDGE ASSESSMENT 86

```
Mostly Conventional   Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.................o...........●.....o.................o
0       12        24       36       48       60       72       84       96      108      120
```

SCALE F PERFORMANCE ASSESSMENT 122

```
Mostly Conventional   Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.................o.................o.●...............o
0       16        32       47       63       75       88      104      120      131      156
```

SCALE G GRADING 17

```
Mostly Conventional   Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o........●........o.................o.................o.................o
0        6        12       17       22       27       32       37       42       48       54
```

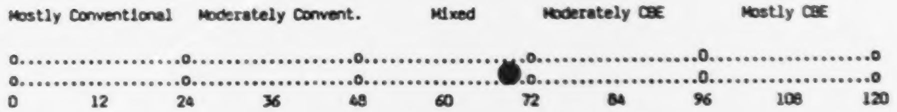
SCALE H RELATED FACTORS 131

```
Mostly Conventional   Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.................o...............●.o.................o
0       18        36       54       73       87      101      120      138      156      174
```

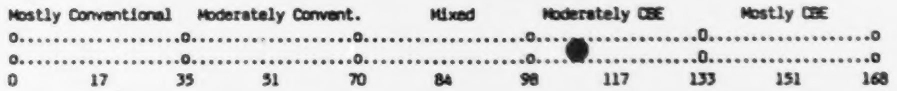
PROGRAM PROFILE

INSTITUTION NAME #11 PROGRAM NAME Welding

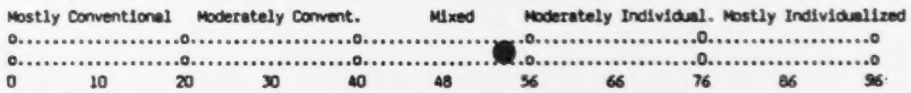
SCALE A KNOWLEDGE INSTRUCTION 69



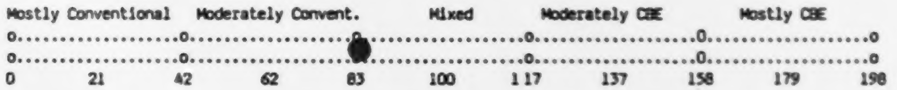
SCALE B PERFORMANCE INSTRUCTION 106



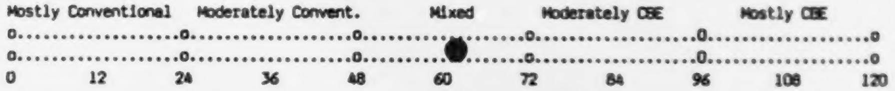
SCALE C INDIVIDUALIZATION 53



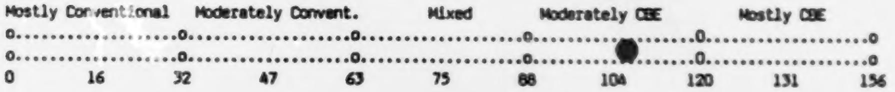
SCALE D PROGRAM CONTENT SPECIFICATION 83



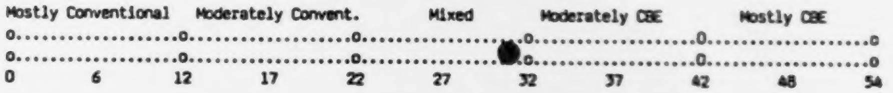
SCALE E KNOWLEDGE ASSESSMENT 61



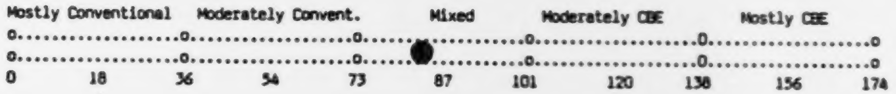
SCALE F PERFORMANCE ASSESSMENT 108



SCALE G GRADING 30



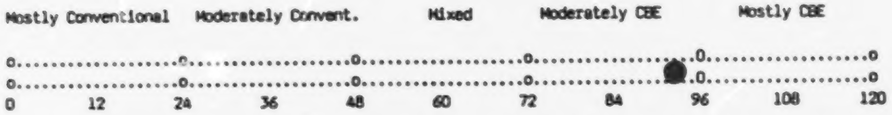
SCALE H RELATED FACTORS 84



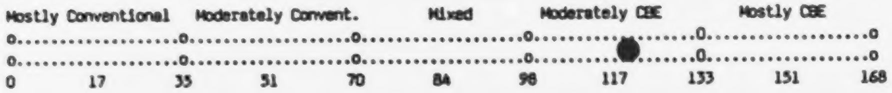
PROGRAM PROFILE

INSTITUTION NAME #12 PROGRAM NAME Welding

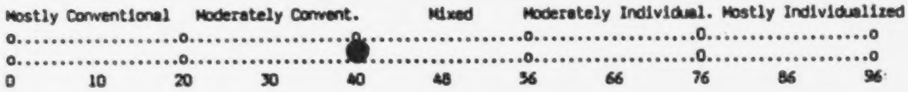
SCALE A KNOWLEDGE INSTRUCTION 91



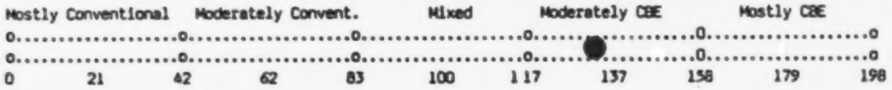
SCALE B PERFORMANCE INSTRUCTION 120



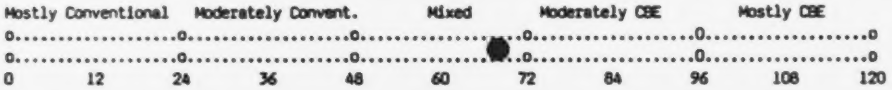
SCALE C INDIVIDUALIZATION 40



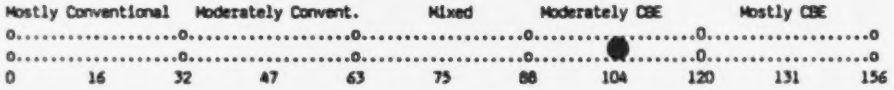
SCALE D PROGRAM CONTENT SPECIFICATION 130



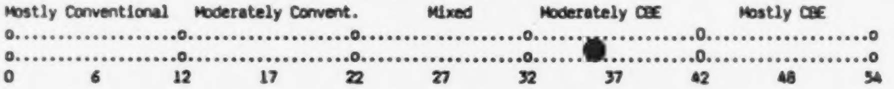
SCALE E KNOWLEDGE ASSESSMENT 68



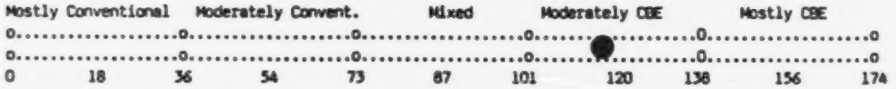
SCALE F PERFORMANCE ASSESSMENT 104



SCALE G GRADING 39



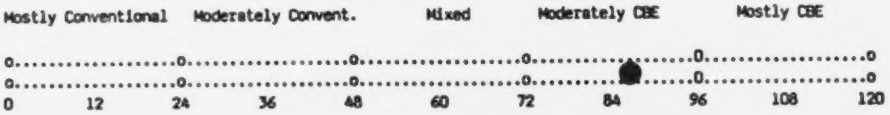
SCALE H RELATED FACTORS 115



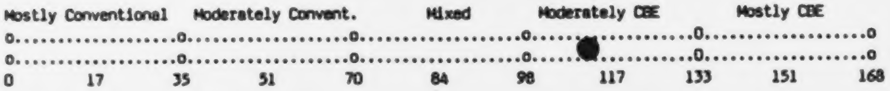
PROGRAM PROFILE

INSTITUTION NAME #13 PROGRAM NAME Welding

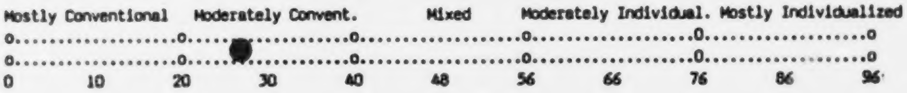
SCALE A KNOWLEDGE INSTRUCTION 86



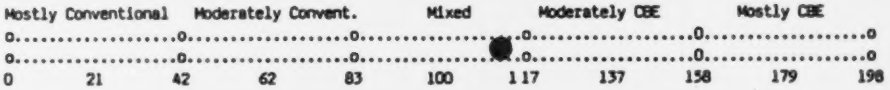
SCALE B PERFORMANCE INSTRUCTION 109



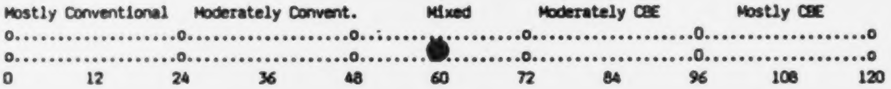
SCALE C INDIVIDUALIZATION 26



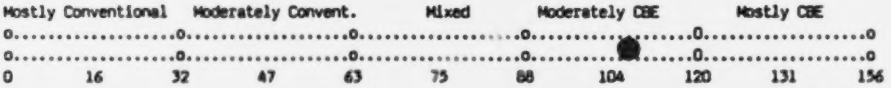
SCALE D PROGRAM CONTENT SPECIFICATION 112



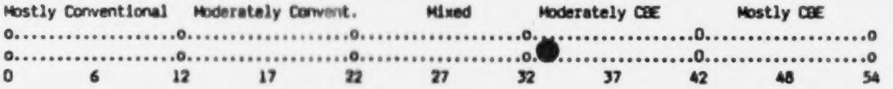
SCALE E KNOWLEDGE ASSESSMENT 59



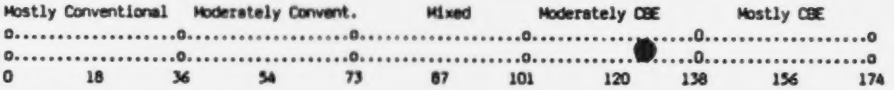
SCALE F PERFORMANCE ASSESSMENT 106



SCALE G GRADING 33



SCALE H RELATED FACTORS 126



PROGRAM PROFILE

INSTITUTION NAME #14 PROGRAM NAME Welding

SCALE A KNOWLEDGE INSTRUCTION 79

Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 12 24 36 48 60 72 84 96 108 120

SCALE B PERFORMANCE INSTRUCTION 125

Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 17 35 51 70 84 98 117 133 151 168

SCALE C INDIVIDUALIZATION 45

Mostly Conventional Moderately Convent. Mixed Moderately Individual. Mostly Individualized

0 10 20 30 40 48 56 66 76 86 96

SCALE D PROGRAM CONTENT SPECIFICATION 125

Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 21 42 62 83 100 117 137 158 179 198

SCALE E KNOWLEDGE ASSESSMENT 68

Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 12 24 36 48 60 72 84 96 108 120

SCALE F PERFORMANCE ASSESSMENT 121

Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 16 32 47 63 75 88 104 120 131 156

SCALE G GRADING 36

Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 6 12 17 22 27 32 37 42 48 54

SCALE H RELATED FACTORS 130

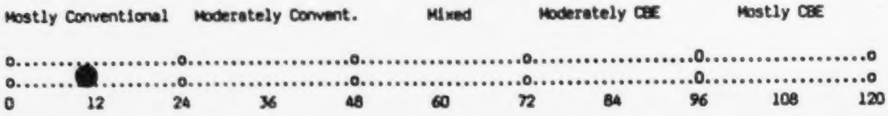
Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 18 36 54 73 87 101 120 138 156 174

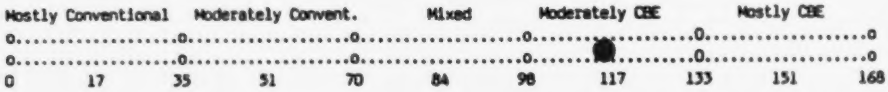
PROGRAM PROFILE

INSTITUTION NAME #15 PROGRAM NAME Welding

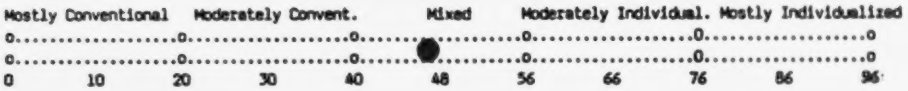
SCALE A KNOWLEDGE INSTRUCTION 11



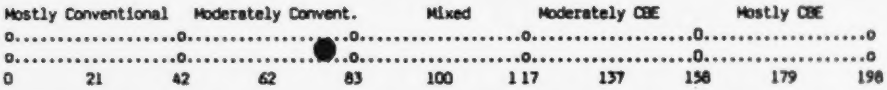
SCALE B PERFORMANCE INSTRUCTION 114



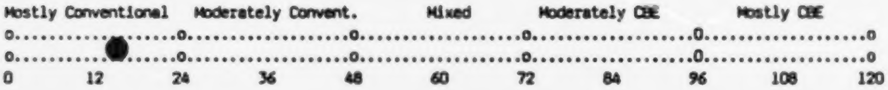
SCALE C INDIVIDUALIZATION 46



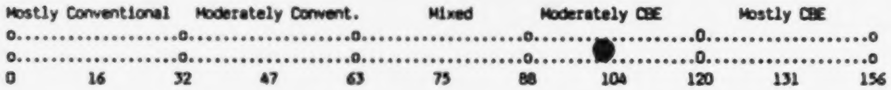
SCALE D PROGRAM CONTENT SPECIFICATION 75



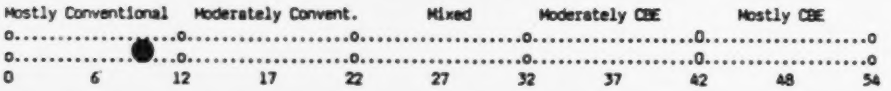
SCALE E KNOWLEDGE ASSESSMENT 15



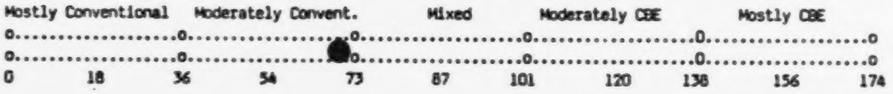
SCALE F PERFORMANCE ASSESSMENT 102



SCALE G GRADING 9



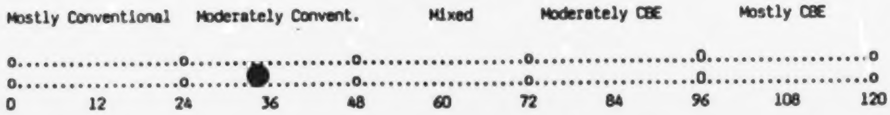
SCALE H RELATED FACTORS 70



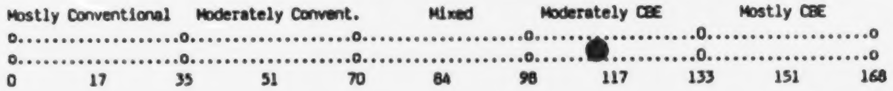
PROGRAM PROFILE

INSTITUTION NAME #16 PROGRAM NAME Welding

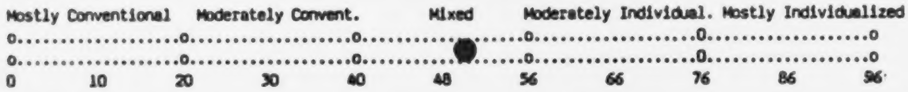
SCALE A KNOWLEDGE INSTRUCTION 32



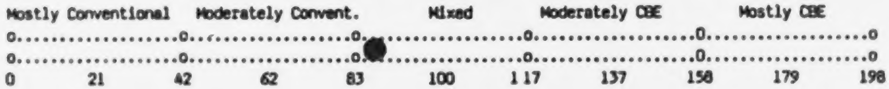
SCALE B PERFORMANCE INSTRUCTION 113



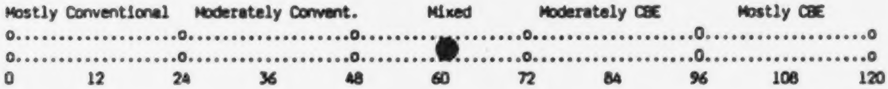
SCALE C INDIVIDUALIZATION 50



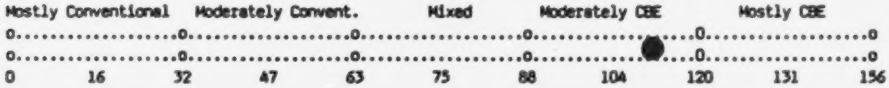
SCALE D PROGRAM CONTENT SPECIFICATION 84



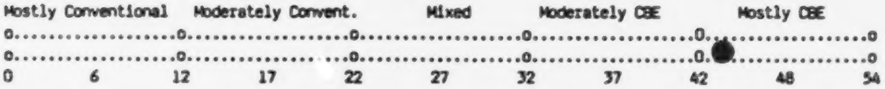
SCALE E KNOWLEDGE ASSESSMENT 60



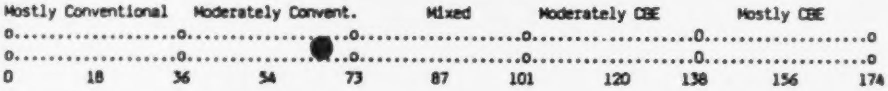
SCALE F PERFORMANCE ASSESSMENT 113



SCALE G GRADING 44



SCALE H RELATED FACTORS 66



APPENDIX E

Program Profiles for Fourteen Other Programs

PROGRAM PROFILE

INSTITUTION NAME #1 PROGRAM NAME Electronics

SCALE A KNOWLEDGE INSTRUCTION 31

```
Mostly Conventional  Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o....●............o.................o.................o.................o
0        12       24       36       48       60       72       84       96       108      120
```

SCALE B PERFORMANCE INSTRUCTION 42

```
Mostly Conventional  Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o...●.............o.................o.................o.................o
0        17       35       51       70       84       98       117      133      151      168
```

SCALE C INDIVIDUALIZATION 26

```
Mostly Conventional  Moderately Convent.      Mixed    Moderately Individual. Mostly Individualized
o.................o.................o.................o.................o.................o
o.................o....●............o.................o.................o.................o
0        10       20       30       40       48       56       66       76       86       96
```

SCALE D PROGRAM CONTENT SPECIFICATION 42

```
Mostly Conventional  Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................●.................o.................o.................o.................o
0        21       42       62       83       100      117      137      158      179      198
```

SCALE E KNOWLEDGE ASSESSMENT 53

```
Mostly Conventional  Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o...●.............o.................o.................o
0        12       24       36       48       60       72       84       96       108      120
```

SCALE F PERFORMANCE ASSESSMENT 88

```
Mostly Conventional  Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.................●.................o.................o
0        16       32       47       63       75       88       104      120      131      156
```

SCALE G GRADING 30

```
Mostly Conventional  Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.............●...o.................o.................o
0        6        12       17       22       27       32       37       42       48       54
```

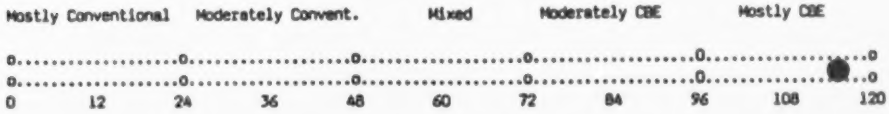
SCALE H RELATED FACTORS 75

```
Mostly Conventional  Moderately Convent.      Mixed      Moderately CBE      Mostly CBE
o.................o.................o.................o.................o.................o
o.................o.................o.●...............o.................o.................o
0        18       36       54       73       87       101      120      138      156      174
```

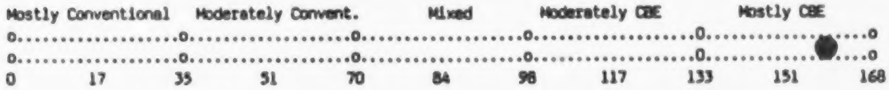
PROGRAM PROFILE

INSTITUTION NAME #2 PROGRAM NAME Dental Assistant

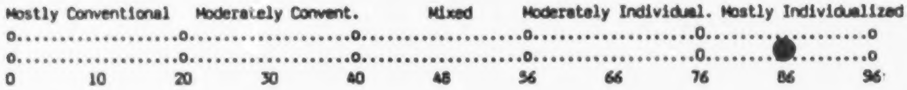
SCALE A KNOWLEDGE INSTRUCTION 115



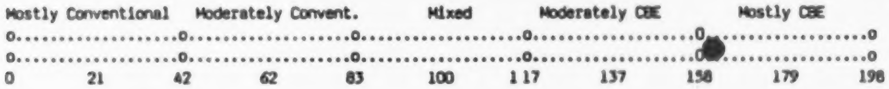
SCALE B PERFORMANCE INSTRUCTION 160



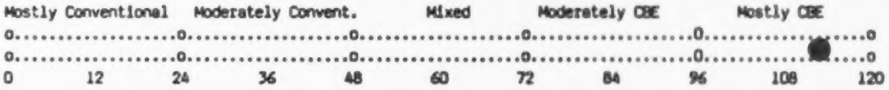
SCALE C INDIVIDUALIZATION 86



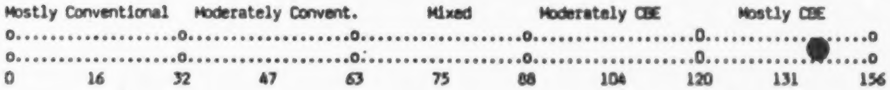
SCALE D PROGRAM CONTENT SPECIFICATION 159



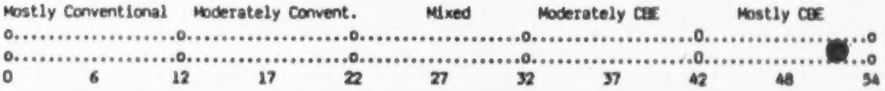
SCALE E KNOWLEDGE ASSESSMENT 114



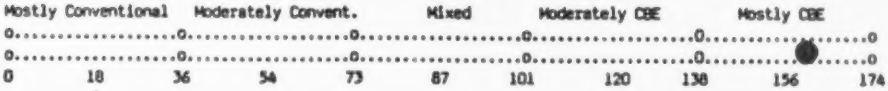
SCALE F PERFORMANCE ASSESSMENT 145



SCALE G GRADING 51



SCALE H RELATED FACTORS 161



PROGRAM PROFILE

INSTITUTION NAME #3 PROGRAM NAME Small Engine Repair

SCALE A KNOWLEDGE INSTRUCTION 9

```
Mostly Conventional  Moderately Convent.    Mixed    Moderately CBE    Mostly CBE
o.................o.................o.................o.................O.................o
o........●........o.................o.................o.................O.................o
0        12       24       36       48       60       72       84       96       108      120
```

SCALE B PERFORMANCE INSTRUCTION 43

```
Mostly Conventional  Moderately Convent.    Mixed    Moderately CBE    Mostly CBE
o.................o.................o.................o.................O.................o
o.................o....●............o.................o.................O.................o
0        17       35       51       70       84       98       117      133      151      168
```

SCALE C INDIVIDUALIZATION 2

```
Mostly Conventional  Moderately Convent.    Mixed    Moderately Individual. Mostly Individualized
o.................o.................o.................o.................O.................o
o.●...............o.................o.................o.................O.................o
0        10       20       30       40       48       56       66       76       86       96
```

SCALE D PROGRAM CONTENT SPECIFICATION 32

```
Mostly Conventional  Moderately Convent.    Mixed    Moderately CBE    Mostly CBE
o.................o.................o.................o.................O.................o
o.............●...o.................o.................o.................O.................o
0        21       42       62       83       100      117      137      158      179      198
```

SCALE E KNOWLEDGE ASSESSMENT 11

```
Mostly Conventional  Moderately Convent.    Mixed    Moderately CBE    Mostly CBE
o.................o.................o.................o.................O.................o
o........●........o.................o.................o.................O.................o
0        12       24       36       48       60       72       84       96       108      120
```

SCALE F PERFORMANCE ASSESSMENT 34

```
Mostly Conventional  Moderately Convent.    Mixed    Moderately CBE    Mostly CBE
o.................o.................o.................o.................O.................o
o.................o.●...............o.................o.................O.................o
0        16       32       47       63       75       88       104      120      131      156
```

SCALE G GRADING 3

```
Mostly Conventional  Moderately Convent.    Mixed    Moderately CBE    Mostly CBE
o.................o.................o.................o.................O.................o
o...●.............o.................o.................o.................O.................o
0        6        12       17       22       27       32       37       42       48       54
```

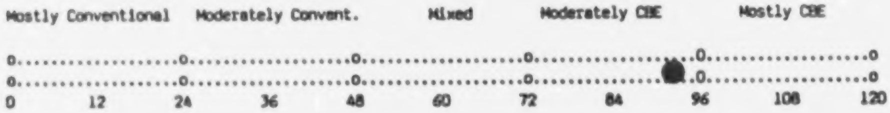
SCALE H RELATED FACTORS 2

```
Mostly Conventional  Moderately Convent.    Mixed    Moderately CBE    Mostly CBE
o.................o.................o.................o.................O.................o
o●................o.................o.................o.................O.................o
0        18       36       54       73       87       101      120      138      156      174
```

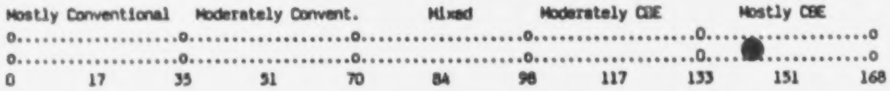
PROGRAM PROFILE

INSTITUTION NAME #4 PROGRAM NAME Auto Mechanics

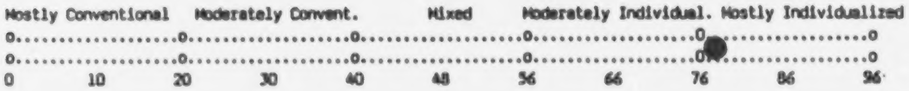
SCALE A KNOWLEDGE INSTRUCTION 92



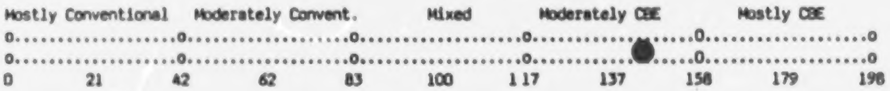
SCALE B PERFORMANCE INSTRUCTION 142



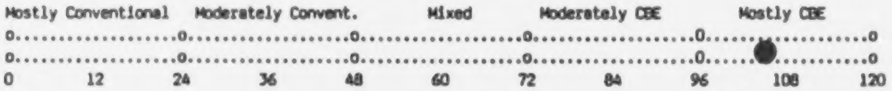
SCALE C INDIVIDUALIZATION 77



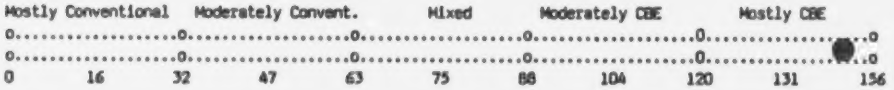
SCALE D PROGRAM CONTENT SPECIFICATION 141



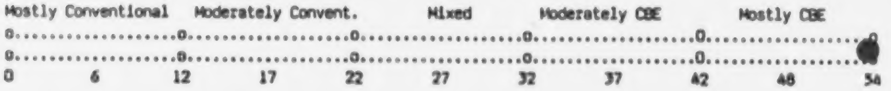
SCALE E KNOWLEDGE ASSESSMENT 105



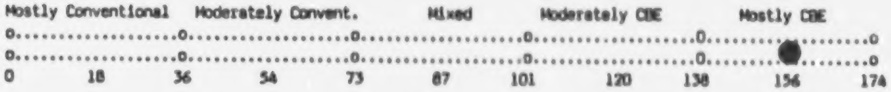
SCALE F PERFORMANCE ASSESSMENT 145



SCALE G GRADING 54



SCALE H RELATED FACTORS 156



PROGRAM PROFILE

INSTITUTION NAME #5
PROGRAM NAME Accounting

SCALE A KNOWLEDGE INSTRUCTION 89

Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 12 24 36 48 60 72 84 96 108 120

SCALE B PERFORMANCE INSTRUCTION 125

Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 17 35 51 70 84 98 117 133 151 168

SCALE C INDIVIDUALIZATION 57

Mostly Conventional Moderately Convent. Mixed Moderately Individual. Mostly Individualized

0 10 20 30 40 48 56 66 76 86 96

SCALE D PROGRAM CONTENT SPECIFICATION 150

Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 21 42 62 83 100 117 137 158 179 198

SCALE E KNOWLEDGE ASSESSMENT 112

Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 12 24 36 48 60 72 84 96 108 120

SCALE F PERFORMANCE ASSESSMENT 126

Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 16 32 47 63 75 88 104 120 131 156

SCALE G GRADING 37

Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 6 12 17 22 27 32 37 42 48 54

SCALE H RELATED FACTORS 142

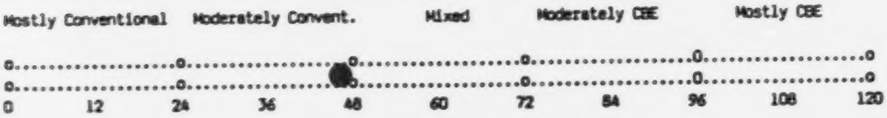
Mostly Conventional Moderately Convent. Mixed Moderately CBE Mostly CBE

0 18 36 54 73 87 101 120 138 156 174

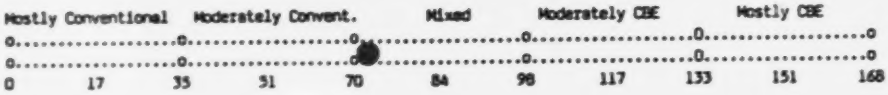
PROGRAM PROFILE

INSTITUTION NAME #6 PROGRAM NAME Electrical Wiring

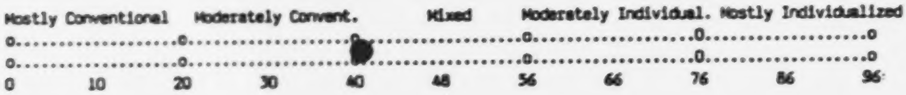
SCALE A KNOWLEDGE INSTRUCTION 46



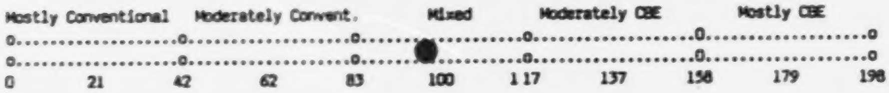
SCALE B PERFORMANCE INSTRUCTION 71



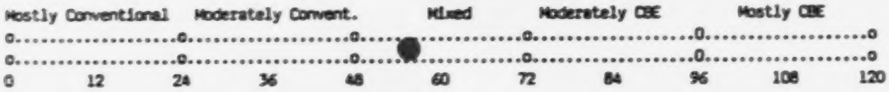
SCALE C INDIVIDUALIZATION 41



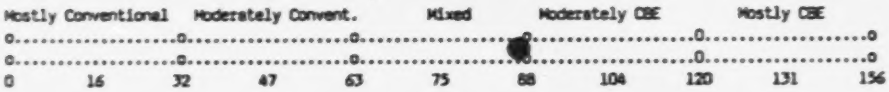
SCALE D PROGRAM CONTENT SPECIFICATION 96



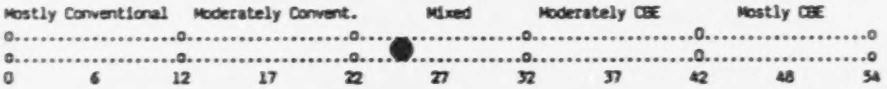
SCALE E KNOWLEDGE ASSESSMENT 56



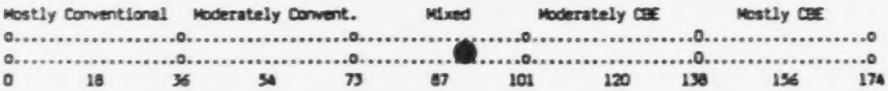
SCALE F PERFORMANCE ASSESSMENT 81



SCALE G GRADING 25



SCALE H RELATED FACTORS 91

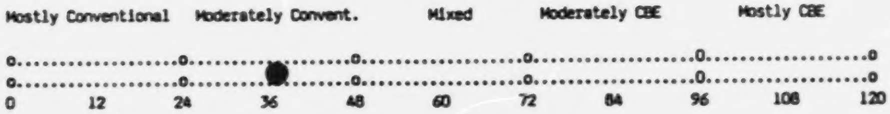


PROGRAM PROFILE

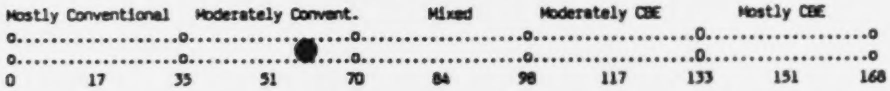
INSTITUTION NAME #7

PROGRAM NAME Drafting

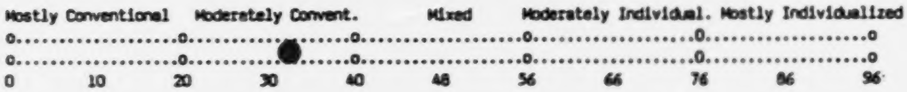
SCALE A KNOWLEDGE INSTRUCTION 37



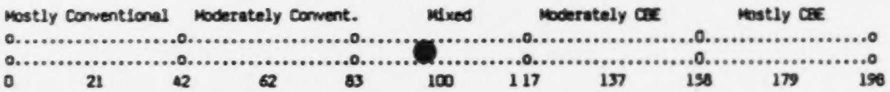
SCALE B PERFORMANCE INSTRUCTION 57



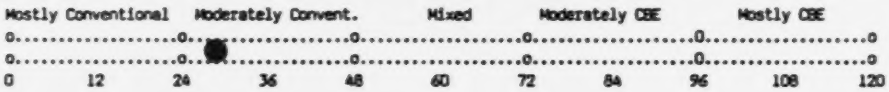
SCALE C INDIVIDUALIZATION 32



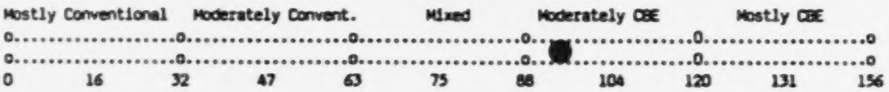
SCALE D PROGRAM CONTENT SPECIFICATION 97



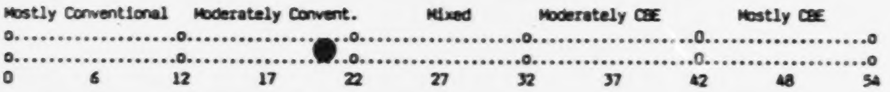
SCALE E KNOWLEDGE ASSESSMENT 29



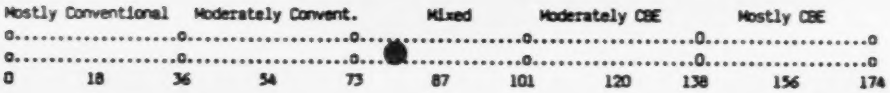
SCALE F PERFORMANCE ASSESSMENT 95



SCALE G GRADING 20



SCALE H RELATED FACTORS 78

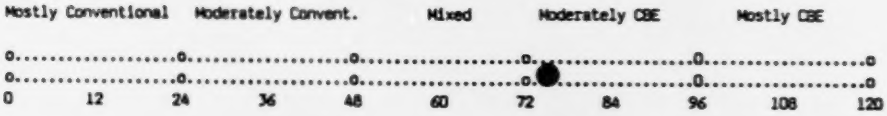


PROGRAM PROFILE

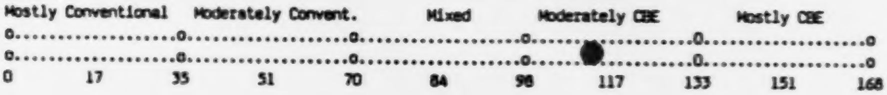
INSTITUTION NAME #8

PROGRAM NAME Electronics

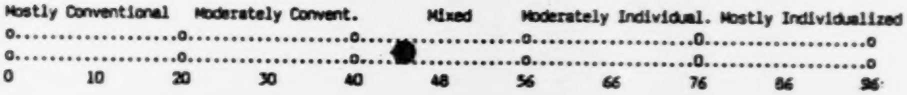
SCALE A KNOWLEDGE INSTRUCTION 74



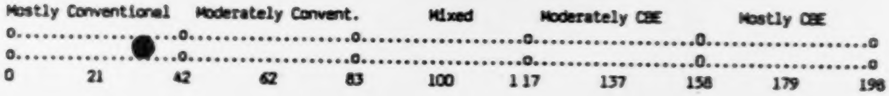
SCALE B PERFORMANCE INSTRUCTION 114



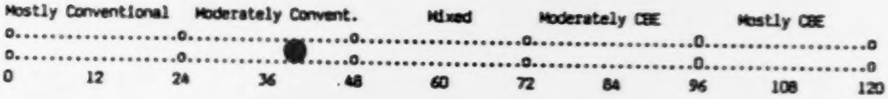
SCALE C INDIVIDUALIZATION 44



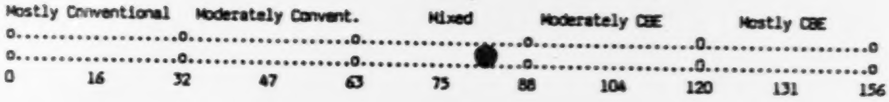
SCALE D PROGRAM CONTENT SPECIFICATION 32



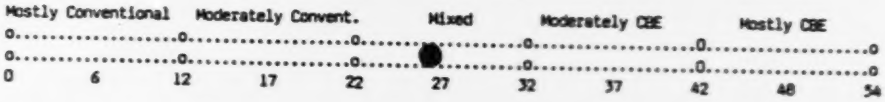
SCALE E KNOWLEDGE ASSESSMENT 40



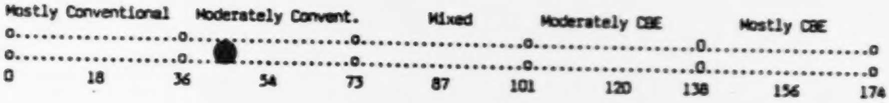
SCALE F PERFORMANCE ASSESSMENT 82



SCALE G GRADING 28



SCALE H RELATED FACTORS 43

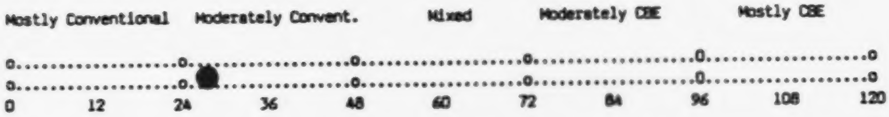


PROGRAM PROFILE

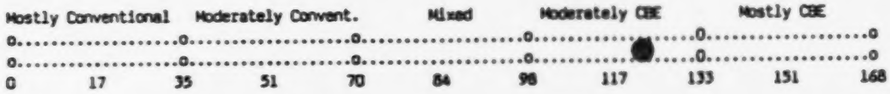
INSTITUTION NAME #9

PROGRAM NAME Cosmetology

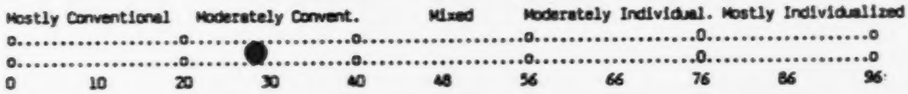
SCALE A KNOWLEDGE INSTRUCTION 26



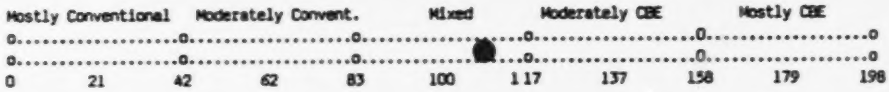
SCALE B PERFORMANCE INSTRUCTION 122



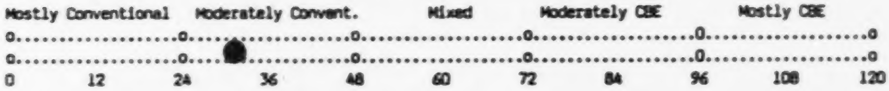
SCALE C INDIVIDUALIZATION 28



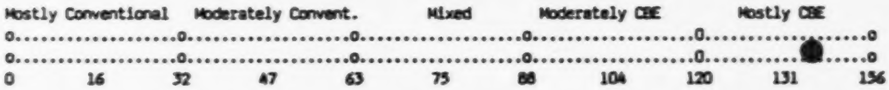
SCALE D PROGRAM CONTENT SPECIFICATION 108



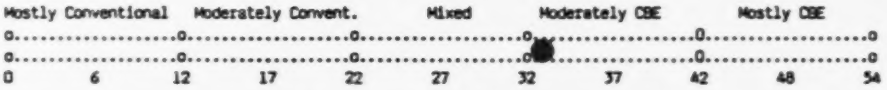
SCALE E KNOWLEDGE ASSESSMENT 30



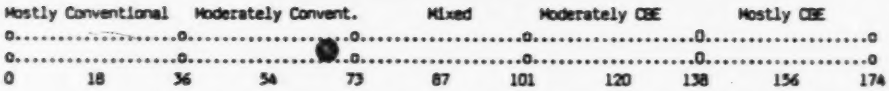
SCALE F PERFORMANCE ASSESSMENT 138



SCALE G GRADING 33



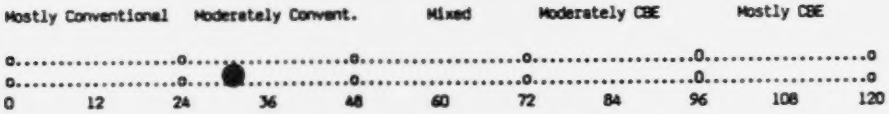
SCALE H RELATED FACTORS 69



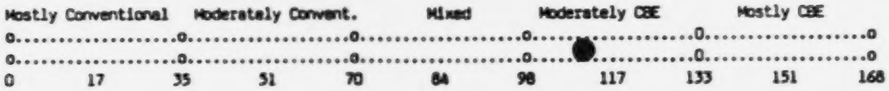
PROGRAM PROFILE

INSTITUTION NAME #10 PROGRAM NAME Auto Mechanics

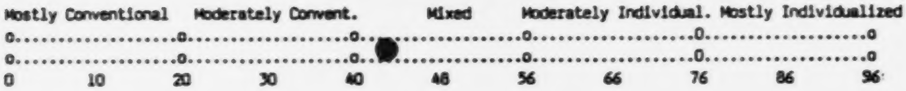
SCALE A KNOWLEDGE INSTRUCTION 30



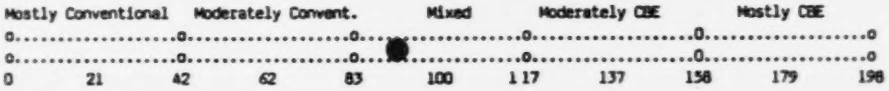
SCALE B PERFORMANCE INSTRUCTION 111



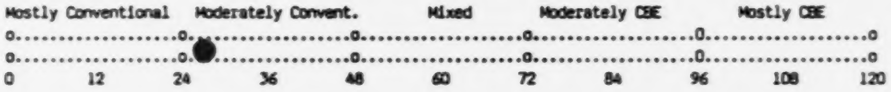
SCALE C INDIVIDUALIZATION 43



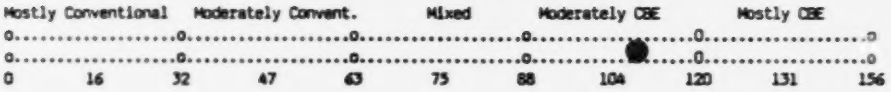
SCALE D PROGRAM CONTENT SPECIFICATION 90



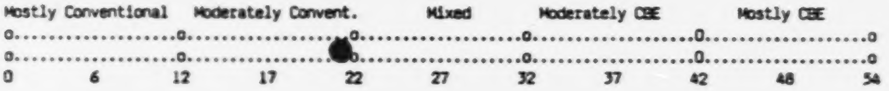
SCALE E KNOWLEDGE ASSESSMENT 26



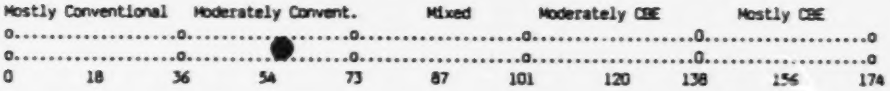
SCALE F PERFORMANCE ASSESSMENT 108



SCALE G GRADING 21



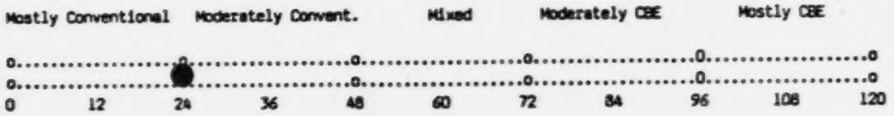
SCALE H RELATED FACTORS 55



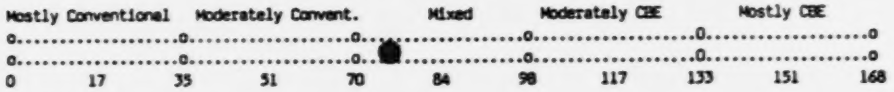
PROGRAM PROFILE

INSTITUTION NAME #11 PROGRAM NAME Air Conditioning

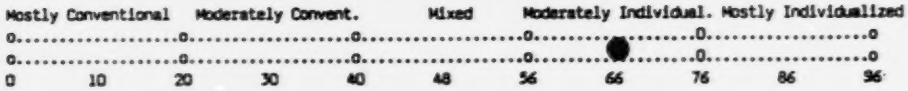
SCALE A KNOWLEDGE INSTRUCTION 24



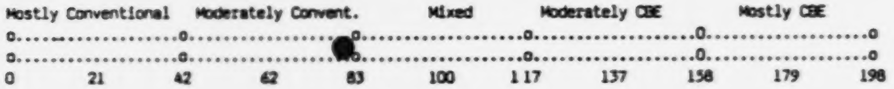
SCALE B PERFORMANCE INSTRUCTION 75



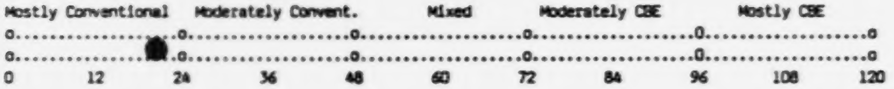
SCALE C INDIVIDUALIZATION 66



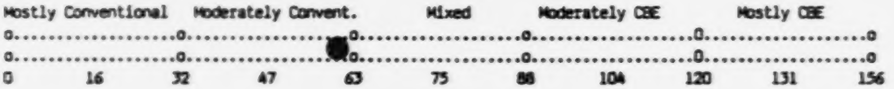
SCALE D PROGRAM CONTENT SPECIFICATION 80



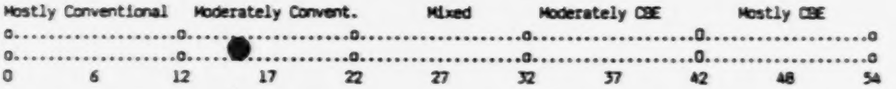
SCALE E KNOWLEDGE ASSESSMENT 20



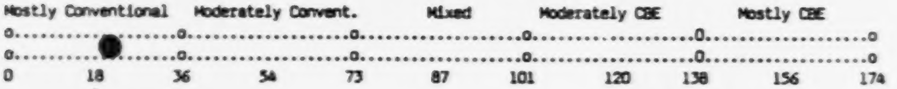
SCALE F PERFORMANCE ASSESSMENT 60



SCALE G GRADING 15



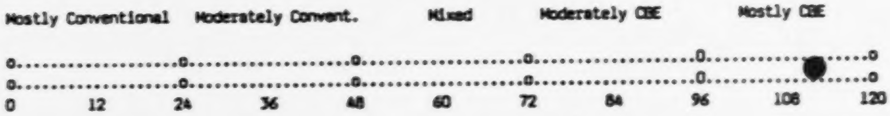
SCALE H RELATED FACTORS 22



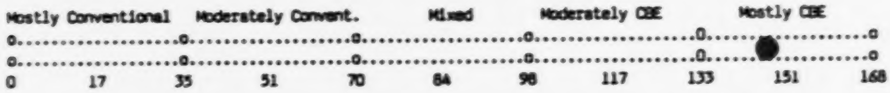
PROGRAM PROFILE

INSTITUTION NAME #12 PROGRAM NAME Motorcycle Mechanics

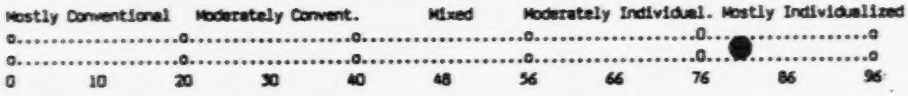
SCALE A KNOWLEDGE INSTRUCTION 112



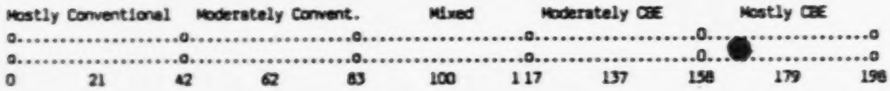
SCALE B PERFORMANCE INSTRUCTION 146



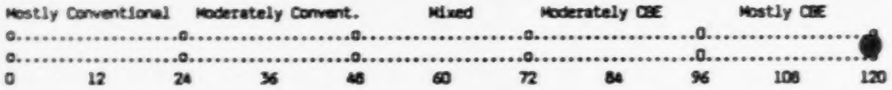
SCALE C INDIVIDUALIZATION 80



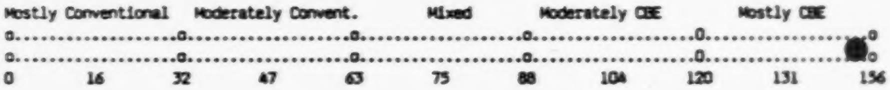
SCALE D PROGRAM CONTENT SPECIFICATION 165



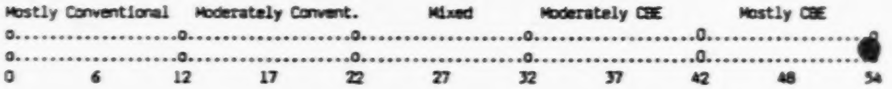
SCALE E KNOWLEDGE ASSESSMENT 120



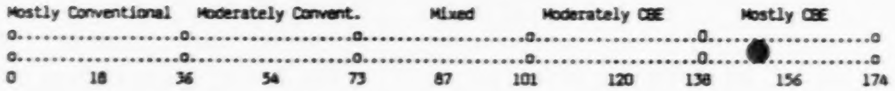
SCALE F PERFORMANCE ASSESSMENT 151



SCALE G GRADING 54



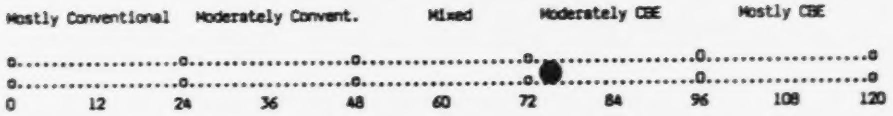
SCALE H RELATED FACTORS 150



PROGRAM PROFILE

INSTITUTION NAME #13 PROGRAM NAME Auto Mechanics

SCALE A KNOWLEDGE INSTRUCTION 74



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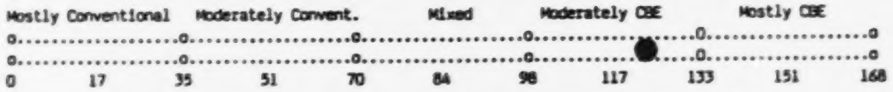
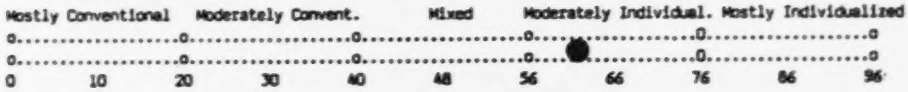
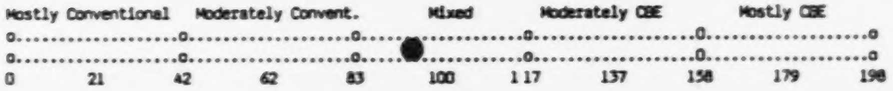


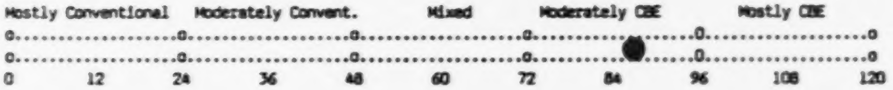
SCALE C INDIVIDUALIZATION 61



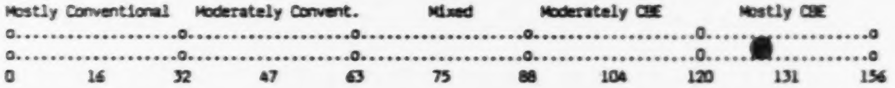
SCALE D PROGRAM CONTENT SPECIFICATION 94



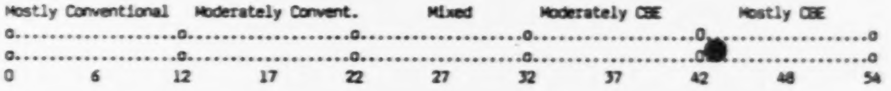
SCALE E KNOWLEDGE ASSESSMENT 87



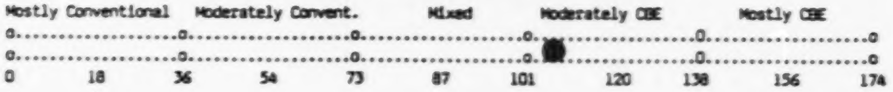
SCALE F PERFORMANCE ASSESSMENT 128



SCALE G GRADING 43



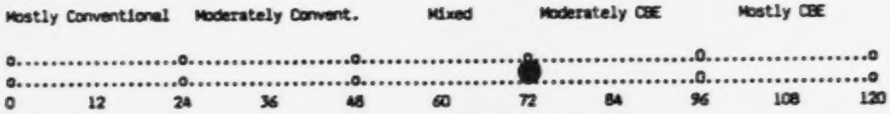
SCALE H RELATED FACTORS 105



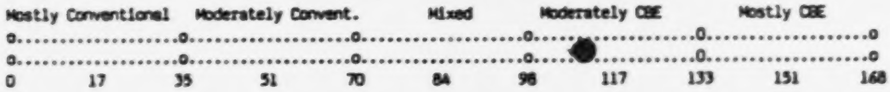
PROGRAM PROFILE

INSTITUTION NAME #14 PROGRAM NAME Drafting

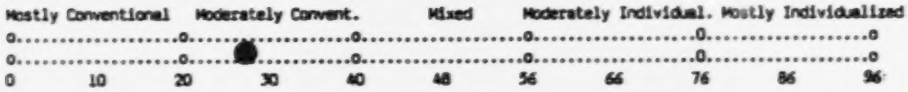
SCALE A KNOWLEDGE INSTRUCTION 72



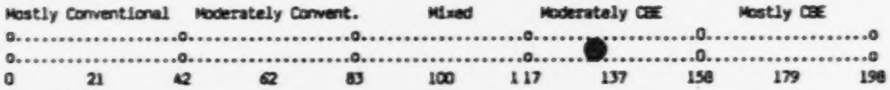
SCALE B PERFORMANCE INSTRUCTION 110



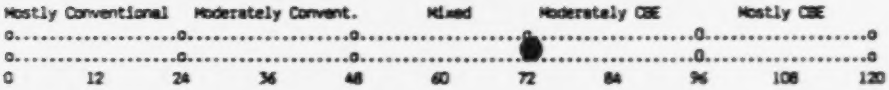
SCALE C INDIVIDUALIZATION 26



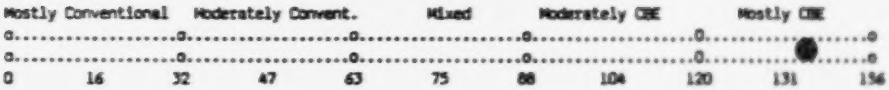
SCALE D PROGRAM CONTENT SPECIFICATION 130



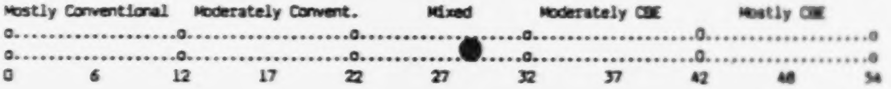
SCALE E KNOWLEDGE ASSESSMENT 72



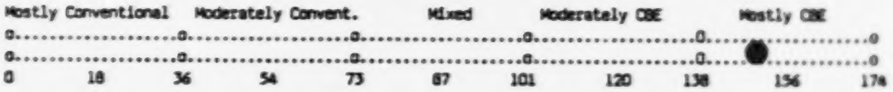
SCALE F PERFORMANCE ASSESSMENT 134



SCALE G GRADING 29



SCALE H RELATED FACTORS 148



APPENDIX F

Frequency Distribution of Item Ratings for Thirty Programs

FREQUENCY DISTRIBUTION

of Item Ratings for Thirty Programs

Scale A

Item Number	Ratings 0 not at all	 1 low extent (Frequencies)	 2 moderate extent	 3 high extent
A1	6	10	7	7
A2	1	9	7	13
A3	5	11	4	10
A4	1	9	8	12
A5.a	6	1	4	19
A5.b	10	7	3	10
A6.a	6	4	10	10
A6.b	8	11	10	1
A6.c	9	4	7	10
A7.a	8	3	7	12
A7.b	13	7	5	5
A8.a	5	3	9	13
A8.b	4	8	7	11
A9.a	6	9	7	8
A9.b	6	12	4	8

FREQUENCY DISTRIBUTION

of Item Ratings for Thirty Programs

Scale B

Item Number	Ratings 0 not at all	 1 low extent (frequencies)	 2 moderate extent	 3 high extent
B1	0	2	6	22
B2	8	15	5	2
B3	5	2	9	14
B4	2	12	4	12
B5	15	4	4	7
B6	2	9	2	17
B7.a	10	4	3	13
B7.b	1	10	4	15
B7.c	4	5	10	11
B8.a	1	2	6	21
B8.b	9	11	6	4
B9.a	2	1	7	20
B9.b	3	19	5	3
B9.c	14	7	6	3
B10.a	1	3	9	17
B10.b	7	9	9	5
B10.c	8	18	3	1
B11.a	6	9	10	5
B11.b	3	5	13	9
B11.c	8	11	6	5
B12.a	16	10	4	0
B12.b	4	8	6	12
B13.a	7	15	6	2
B13.b	4	2	9	15

FREQUENCY DISTRIBUTION

of Item Ratings for Thirty Programs

Scale C

Item	Ratings			
Number	0	1	2	3
	not at all	low extent	moderate extent	high extent
		(frequencies)		
C1	4	2	10	14
C2	13	9	2	6
C3.a	4	4	6	16
C3.b	14	1	3	12
C3.c	4	11	7	8
C3.d	2	18	3	7
C3.e	6	21	3	0
C3.f	23	4	1	2
C3.g	11	13	5	1
C3.h	16	6	5	3
C4.a	11	12	4	3
C4.b	13	2	3	12
C4.c	7	10	6	7
C4.d	0	2	7	21
C4.e	2	15	13	0
C4.f	21	5	2	2
C4.g	12	13	5	1
C4.h	8	8	6	8
C5.a	0	0	4	26
C5.b	11	16	3	0
C6.a	4	1	3	22
C6.b	7	7	6	10

FREQUENCY DISTRIBUTION

of Item Ratings for Thirty Programs

Scale D

Item Number	Ratings			
	0 not at all	1 low extent	2 moderate extent	3 high extent
		(frequencies)		
D1.a	8	2	6	14
D1.b	9	5	9	7
D2.a	9	9	3	9
D2.b	6	12	9	3
D2.c	8	6	10	6
D2.d	12	7	10	1
D3.a	7	3	3	17
D3.b	6	2	3	19
D3.c	10	10	5	5
D3.d	14	12	4	0
D4.a	13	3	7	7
D4.b	2	4	13	11
D4.c	2	6	5	17
D4.d	24	2	1	3
D4.e	20	4	3	3
D5.a	2	10	1	17
D5.b	25	3	1	1
D5.c	8	9	9	4
D5.d	20	4	4	2
D5.e	5	3	7	15
D6.a	4	8	2	16
D6.b	25	2	2	1
D6.c	8	10	7	5
D6.d	20	5	3	2
D6.e	6	5	3	16
D7.a	9	1	2	18
D7.b	10	4	5	11
D8	2	4	6	18
D9	3	10	4	13
D10	8	6	3	13

FREQUENCY DISTRIBUTION

of Item Ratings for Thirty Programs

Scale E

Item Number	Ratings 0 not at all	1 low extent	2 moderate extent	3 high extent
		(frequencies)		
E1	8	5	9	8
E2	11	12	5	2
E3	3	6	13	8
E4	8	6	9	7
E5	2	1	4	23
E6	7	10	6	7
E7	10	7	6	7
E8	14	10	5	11
E9	13	5	1	11
E10	10	2	2	16
E11	5	13	3	9
E12	5	8	6	11
E13	6	4	10	10
E14	17	3	4	6

FREQUENCY DISTRIBUTION

of Item Ratings for Thirty Programs

Scale F

Item Number	Ratings 0 not at all	 1 low extent (frequencies)	 2 moderate extent	 3 high extent
F1	7	7	5	11
F2	13	3	6	8
F3	12	11	4	3
F4.a	12	11	3	4
F4.b	6	3	7	14
F4.c	15	6	6	3
F5	2	1	5	22
F6	17	9	2	2
F7	8	7	13	2
F8	1	1	1	27
F9	11	10	4	5
F10	22	6	1	1
F11	3	5	10	12
F12	11	10	4	5
F13	2	2	9	17
F14	5	6	6	13
F15	23	3	3	1
F16	1	1	3	25
F17	10	6	5	9
F18	20	7	2	1
F19	0	6	10	14

FREQUENCY DISTRIBUTION

of Item Ratings for Thirty Programs

Scale G

Item Number	Ratings 0 not at all	 1 low extent (frequencies)	 2 moderate extent	 3 high extent
G1.a	13	7	1	9
G1.b	22	3	3	2
G2	17	7	4	2
G3	3	1	8	18
G4	7	6	12	5
G5	13	4	6	7
G6	7	5	8	10
G7	5	8	5	12

FREQUENCY DISTRIBUTION

of Item Ratings for Thirty Programs

Scale H

Item Number	Ratings 0 not at all	 1 low extent (frequencies)	 2 moderate extent	 3 high extent
H1	4	3	5	18
H2	7	12	4	7
H3	6	3	4	17
H4.a	6	6	5	13
H4.b	8	7	4	11
H5.a	11	4	2	13
H5.b	11	3	1	15
H6.a	13	2	2	13
H6.b	9	2	3	16
H7	4	3	7	16
H8	14	8	3	5
H9	9	3	6	12
H10	9	5	1	15
H11.a	3	2	8	17
H11.b	10	6	6	8
H12.a	15	5	5	5
H12.b	2	2	2	24
H13.a	3	2	9	16
H13.b	21	6	0	3
H14	3	4	10	13
H15	12	10	3	5
H16	8	13	4	5
H17	17	3	4	6
H18	6	15	5	4
H19	19	5	3	3

APPENDIX G

Tables of Scale Scores
for
Sixteen Welding Programs

SCALE SCORES
for Welding Programs

	Ordered Categories	Scores
Scale A Knowledge Instruction	(95-120) -mostly CBE	99,104,104,108
	(701-94) -moderately CBE	76,79,86,88,91
	(51-69) -mixed	58,69
	(26-50) -moderately conventional	32,33
	(0-25) -mostly conventional	4,11,24
Scale B Performance Instruction	(133-168)-mostly CBE	134,139,148,168
	(98-132) -moderately CBE	106,108,109,113,114,120,125,129,129
	(71-97) -mixed	80
	(36-70) -moderately conventional	63,70
	(0-35) -mostly conventional	none
Scale C Individualization	(76-96) -mostly individualized	none
	(56-75) -moderately individualized	58,67,68,68,75
	(41-55) -mixed	45,46,48,50,53
	(21-40) -moderately conventional	24,26,27,30,32,40
	(0-20) -mostly conventional	none
Scale D Program Content Specification	(158-198)-mostly CBE	none
	(117-157)-moderately CBE	119,125,129,130,136,142,152
	(82-116) -mixed	84,98,112
	(43-83) -moderately conventional	46,58,75,83
	(0-42) -mostly conventional	39
Scale E Knowledge Assessment	(95-120) -mostly CBE	101,114
	(70-94) -moderately CBE	84,86,93
	(51-69) -mixed	54,59,59,60,61,68,68
	(26-50) -moderately conventional	29,38
	(0-25) -mostly conventional	11,15

	Ordered Categories	Scores
Scale F Performance Assessment	(121-156)-mostly CBE	121,122,136,145,153
	(88-120) -moderately CBE	93,102,104,106,108,109,110,113,114,119
	(63-87) -mixed	none
	(32-62) -moderately conventional	57
	(0-31) -mostly conventional	none
Scale G Grading	(43-54) -mostly CBE	44,45,52,54
	(32-42) -moderately CBE	32,33,36,36,39
	(23-31) -mixed	25,30,30
	(12-22) -moderately conventional	17,22
	(0-11) -mostly conventional	7,9
Scale H Related Factors	(138-174)-mostly CBE	161
	(102-137)-moderately CBE	112,115,123,126,130,130,131
	(73-101) -mixed	78,84
	(37-72) -moderately conventional	54,66,70
	(0-36) -mostly conventional	15,17,31

APPENDIX H

Tables of Scale Scores
for
Fourteen Other Programs

SCALE SCORES
For Other Programs

	Ordered Categories	Scores
Scale A Knowledge Instruction	(95-120) -mostly CBE	112,115
	(701-94) -moderately CBE	72,74,74,89,92
	(51-69) -mixed	none
	(26-50) -moderately conventional	26,30,31,37,46
	(0-25) -mostly conventional	9,24
Scale B Performance Instruct-	(133-168)-mostly CBE	142,146,160
	(98-132) -moderately CBE	110,111,114,122,125
	(71-97) -mixed	71,75
	(36-70) -moderately conventional	42,43,57
	(0-35) -mostly conventional	none
Scale C Individualization	(76-96) -mostly individualized	77,80,86
	(56-75) -moderately individualized	57,61,66
	(41-55) -mixed	41,43,44
	(21-40) -moderately conventional	26,26,28,32
	(0-20) -mostly conventional	2
Scale D Program Content Specification	(158-198)-mostly CBE	15,9,165
	(117-157)-moderately CBE	130,141,150
	(82-116) -mixed	90,94,96,97,108
	(43-83) -moderately conventional	80
	(0-42) -mostly conventional	32,32,42
Scale E Knowledge Assessment	(95-120) -mostly CBE	105,112,114,120
	(70-94) -moderately CBE	72,87
	(51-69) -mixed	53,56
	(26-50) -moderately conventional	26,29,30,40
	(0-25) -mostly conventional	11,10

	Ordered Categories	Scores
Scale F Performance Assessment	(121-156)-mostly CBE	126,128,134,138,145,145,151
	(88-120) -moderately CBE	88,95, 108
	(63-87) -mixed	82,87
	(32-62) -moderately conventional	34,60
	(0-31) -mostly conventional	none
Scale G Grading	(43-54) -mostly CBE	43,51,54,54
	(32-42) -moderately CBE	33,37
	(23-31) -mixed	25,28,29,30
	(12-22) -moderately conventional	15,20,21
	(0-11) -mostly conventional	3
Scale H Related Factors	(138-174)-mostly CBE	142,148,150,156,161
	(102-137)-moderately CBE	105
	(73-101) -mixed	75,78,91
	(37-72) -moderately conventional	43,55,69
	(0-36) -mostly conventional	2,22

APPENDIX I

Instrument Reliability

Visit - Revisit Reliabilities
(based on 6 programs)

SCALE	RELIABILITY	SCALE STANDARD DEVIATION	STANDARD ERROR OF MEASUREMENT
A. Knowledge Instruction	.89	35.82	11.88
B. Performance Instruction	.62	22.59	14.54
C. Individualization	.91	22.41	6.78
D. Program Content Specification	.53	23.72	16.26
E. Knowledge Assessment	.79	37.37	17.13
F. Performance Assessment	.43	18.26	13.79
G. Grading	.71	10.95	5.90
H. Related Factors	.89	40.86	13.55

APPENDIX J

Advisory Committee

Advisory Committee:

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